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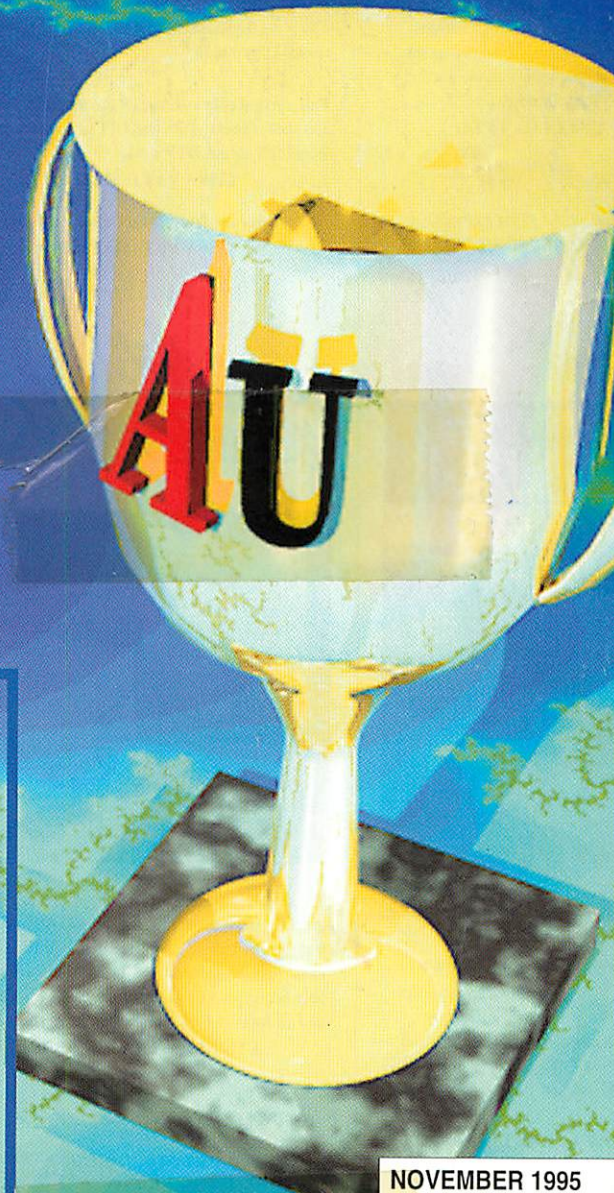
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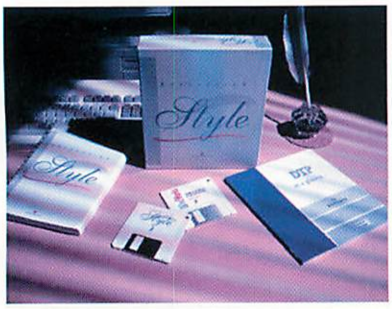




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"In short it is amazing..."

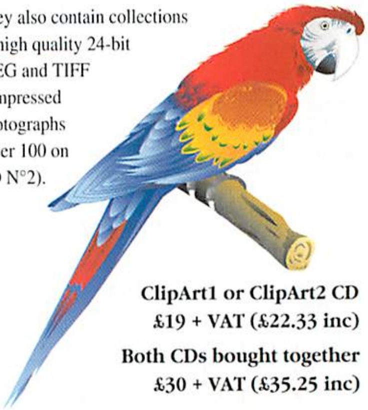
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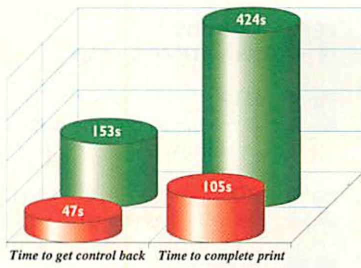
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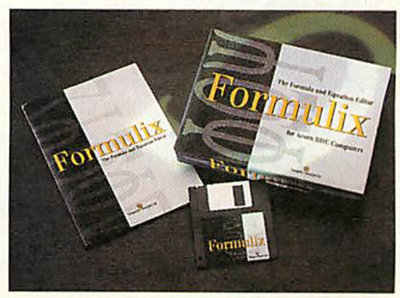
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CONTENTS

Editor's letter

Time for another show, time for another award ceremony. This Acorn World show is a crucial one for Acorn, as it has to prove that despite its staff changes, despite its losses, and despite its barrage at the hands of a number of dealers, the Acorn market is not just safe, it's growing and getting stronger. Quite how this message will get across will be one of the important aspects of the show: it's no good having a glossy event if there are no interesting products, and no punters. I have no doubt that it will be a good show, but take your opportunity to go along and make sure Acorn is doing the best for its market. They have to give you answers if you're grilling them in person...

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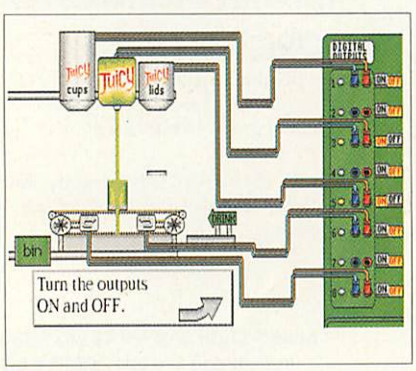
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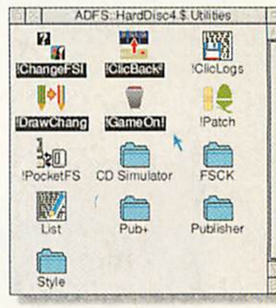
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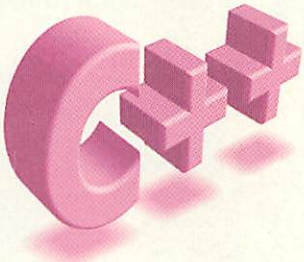


EDUCATION





November 1995







Acorn WORLD
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Next month in Acorn User

The Online family
We talk to a family participating in the Online Media trials at Cambridge, and find out how Acorn's technology will soon change the way we use our televisions.

Changes at Acorn
We will be bringing an exclusive report on Acorn's two new divisions: Applied RISC Technologies and Acorn Education, as well as looking to the future and likely changes in the market.

Thames Water
It sounds unlikely, but it's true. James Pond, underwater agent, has been drafted in to explain all about Thames Water's Ring Main project. We have a full report.

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PipeDream 4	COLT	£85
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Populous	KRIS	£23
Poster	4MAT	£74
Presenter GTi	LIND	£66
PrimeArt, KS1-4	MINE	£40
PrimeArt Display Kit, KS1-4	MINE	£20
PrimeMover, KS2-4	MINE	£56
PrimeSolver Full version, KS1-4	MINE	£49
PrimeSolver Home version, KS1-4	MINE	£36
PrimeWord, KS2-4	MINE	£39
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Canon BubbleJet	OAKS	£15
Canon LBP	OAKS	£15
Deskjet 500/550C	BEEB	£15
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ProArtisan 24 (Risc PC only)	CLAR	£125
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Saloon Cars Deluxe	FOUR	£22
– Extra Courses	FOUR	£15
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Science	MICS	£23
Scrabble	USGO	£21
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– secondary site licence	SIBE	£539
Sibelius 6 + Sibelius 7 Student	SIBE	£525
Sibelius 6 secondary site licence + Sibelius 7 Student	SIBE	£749
Sibelius 7	SIBE	£736
Sibelius 7 Student	SIBE	£464
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Sim City 2000 for A5000	KRIS	**£30**
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smArtFiler	4MAT	£24
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Removable Hard Disc Fitting Kit for A5000	ICS	£25

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– Ink Cartridge, Magenta	CANO	£19
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– Ink Cartridge, Black	CANO	£26
– Ink Tank, Black	CANO	£9
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DeskJet Ink Cartridge, Black	HEWL	£21
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Other hardware

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ColourCard Gold	COMC	£195
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PowerWAVE 50	AUDI	£193
PowerWAVE 50 - S	AUDI	£242
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RISC OS 3.1 3 Set Rom Pack	ACOR	£75
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RISC OS 3.1 Software Upgrade with documentation	ACOR	£67
RISC OS 3.1 Software Upgrade without documentation	ACOR	£39
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ScanLight 256 for A3000/3101/3020/A4000	COMC	£138
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Acorn posts huge loss: jobs in Acorn Computers Ltd cut by a third

THE forces behind last month's sudden departure of managing director Sam Wauchope have surfaced with a vengeance. The Acorn group has made its biggest financial loss since the dark days of the pre-Olivetti takeover more than a decade ago. For the first six months of 1995, Acorn's pre-tax loss amounted to no less than £7.6m (million) compared with its £2.0m loss in the same period in 1994. Turnover dropped by 18 per cent from £23.7m to £19.4m.

Acorn's new managing director, David Lee, has moved swiftly to tackle Acorn's problems. Unfortunately, this has meant the loss of 56 jobs in the UK, leaving the head count at Acorn Computers Limited, excluding Online Media, at just 110. However, over 25 vacancies have been identified within the group, so some people will be re-employed. Acorn is once again restructuring: Acorn's sales and marketing director Mike O'Riordan heads a new division called Acorn Education and Peter Bondar, recently appointed to the Acorn board as technical director, becomes head of the other new division called Applied Risc Technologies (ART).

These two developments, as is explained on the next page, are far more than cosmetic and represent a sea change in Acorn's corporate attitude to rival computing platforms and the way it handles its in-house technology. Acorn is moving to a more open attitude towards adopting more industry-standard technologies with which to combine RISC OS and ARM hardware.

Acorn has focussed its business into key areas. Acorn's training, publishing and developer's liaison operations have been restructured within its education division, which has been strengthened and now has more staff than before.



Peter Bondar, who will head Acorn's new division Applied Risc Technologies.

Acorn Education will not just sell to schools; home users will also be targeted in the form of the 'concerned parent'. Clan Acorn is now also run from Acorn Education to avoid duplication of resources – Acorn emphasises that the enthusiasts' market still forms a key part of its future plans.

The figures that led to the decision to re-organise Acorn

Acorn says computer sales to end customers fell by 11 per cent in the first six months of 1995. Gross margins dropped once again, from 32 per cent to 24 per cent. Acorn Computers Limited (ACL) had managed to reduce its personal computer business operating costs by 8.5 per cent, but this was nowhere near enough to deal with the negative pressures on the company.

ACL posted an operational loss of £3.4m, almost double the previous year's figure. Online Media made a budgeted (and expected) loss of £1.6m, making the total operational loss £5.0m compared with £2.2m in 1994. The 56 redundancies are calculated to save £1.4m, though redundancy incurred an exceptional charge of £0.6m. To this can be added the closure of Acorn Computers GmbH in Germany costing £0.5m, while a stock writedown of £1.2m and additional warranty provision of £0.4m added more red ink to the balance sheet.

But what of the £17.1m netted by the rights issue earlier this year? £2.1m went to Online Media, £8.5m was soaked up to cancel the group's bank overdraft and the balance was split further between Online Media (£2.4m) and ACL (£3.7m). £2.5m left over was retained as cash as of 2 July. ARM Ltd contributed £0.6m profit, up 20 per cent from last year.

With the euphoria emanating from the Risc PC's sales performance, it was difficult to fathom Acorn's loss posted six months ago. It's now clear that the Risc PC was not enough to save Acorn's profitability. This, combined with further depression in the education market, has produced Acorn's blackest balance sheet for over a decade. Sam Wauchope was on record as saying that further losses would be unacceptable, let alone *record* losses. It's now no surprise that he left before the financial results.

Cumana products

Cumana has launched a new file server for Acorn networks called Nucleus, which can be used with Econet, Ethernet and Nexus networks. It allows discs of up to 16Gb to be used in a single partition, with over 200 entries in a directory, which has obvious advantages on a network.

Nucleus has its own multi-threaded filing system, meaning that it is able to read, write and create files for multiple users simultaneously. The filing system offers other advantages tailored to the network user, such as the ability of directory entries to hold information about file ownership, system privilege level, creation date and login scripts to be run.

A second networking product – *CDNet 2* – has already been released, offering a suite of facilities to anyone trying to run a CD-ROM server over a network. *CDNet 2* comes with (configurable) settings for most existing Acorn CD-ROMS, and more can easily be added. These settings cover use of cacheing to speed up performance, access privileges both to entire discs and to parts of discs, and the names and styles used to present the CD-ROMs to the end user.

CDNet 2 will export other filing systems, allowing it to act as an application server for, say, local hard drives. It is compatible with Acorn AUN and *Access/Access+*, Nexus, Classnet and Acorn's TCP/IP suite, and costs £150 + VAT. Registered users of *CDNet 1.50* or later can upgrade for free.

Cumana
Tel: (01483) 503121
Fax: (01483) 451371
E-mail: sales@cumana.co.uk

Sibelius coverage

Sibelius Software has been basking in the limelight once more. Its revolutionary music authoring software package received a good review in *The Independent* at the end of August and the software is to be featured in the *Beyond 2000* TV science programme, which has an estimated worldwide audience of 100 million.

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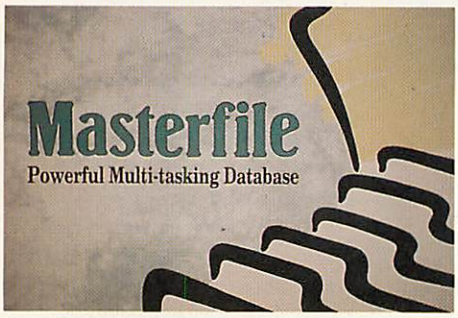
SLEUTH 2

Optical Character Recognition

Sleuth 2 is a truly professional OCR system with superb features like auto page zoning, style recognition, fully integrated spelling checker and guided editing. Sleuth converts scanned images of printed material into ASCII files and can handle virtually all popular fonts in a wide range of styles achieving over 99% accuracy on good quality images. You will need 4Mb Ram and an Acorn-compatible scanner with a minimum resolution of 300 dpi. Sleuth can scan images directly using Twain drivers, which are available separately.

SLEUTH 2 Price £99 *+ £1.70 Carriage*





MASTERFILE

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Masterfile is a fast and flexible general purpose database providing powerful data management facilities suitable for business, education and home.

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C++ Development System

Easy C++ is an excellent implementation of the in-vogue object oriented programming language C++. This implementation conforms to the latest Stroustrup text and supports both Templates and Exceptions. Unlike some other implementations, Easy C++ is not a C++ to C translator but compiles C++ source directly to ARM code making it quick and easy to use.

Easy C++ uses the much praised Easy C WIMP interface which allows programs to be compiled, linked and run at the click of a button. The package includes ANSI C and IOStream libraries, Make facility, integrated ARM assembler, source level debugger and also supports Throwback. The original highly acclaimed Easy C package is also still available.

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TypeStudio is the best selling font effects package that allows outline fonts to be manipulated to produce professional quality posters, banners, logos, letterheads etc. — the possibilities are endless.

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Hearsay is the definitive general purpose communications package for Acorn systems, designed for easy communications for the first time user, but with advanced features making it also the professionals choice.

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The future for Acorn

ACORN has long been an insular company, jealously guarding its own innovative brand of personal computer technology. To justify the continued development and success of its proprietary RISC hardware and RISC OS operating system, the thought of embracing more widely available platforms was taboo within Acorn's management. At the same time, Acorn has never been very keen on licensing technologies like RISC OS to third parties.

That's all changing now. Hidden away in the financial statement describing the creation of the Acorn Education division is the phrase 'covering both industry standard and proprietary hardware platforms.' According to Peter Bondar, who is in charge of the new Applied RISC Technologies (ART) division, Acorn is now poised to move far beyond badging an IBM PowerPC box and running Microsoft Windows NT as a server.

Bondar says that under David Lee, Acorn has been given the freedom to choose whatever technology is required to satisfy the demands of Acorn's customers. If a school wants PCs and Macs, Acorn may in the future consider badge-engineering these products, where possible, to meet the customers' needs.

Swifter development

Acorn will also be fleeter of foot in completing development projects. A number of the announced redundancies are made up of staff who were dedicated to somewhat bureaucratic quality assurance procedures which are now less in keeping with the reduced size of Acorn as a company. PC clones with Acorn's badge will be here sooner than you might think, says Bondar – but not necessarily sourced from Olivetti, who retain a largely hands-off policy towards Acorn. That said, Acorn will continue to push RISC OS systems as the best solution for schools.

In fact Bondar says he is keen to develop the growing relationship Acorn has with IBM – who already supplies the SchoolServer hardware and makes the Risc PC 486 cards. At the same time, Bondar's team will now work to graft some of Acorn's proprietary technology into industry-standard environments. Part of ART's role is to design new products for Acorn Education to sell and this will, of course, continue to include computers based on the latest A7000 and Risc PC technologies. Despite all the cuts, no notable R&D projects have been cancelled – the delayed sub-notebook portable computer to replace the A4, for example, has survived and we can expect a third generation Risc PC to follow.

However, Bondar hinted to us that we might see a Risc PC-like product, running an ARM and RISC OS which didn't necessarily contain a motherboard design which was unique to Acorn. He wouldn't confirm or deny it, but our money is on something like a Risc PC with an industry-standard cross-platform expansion bus like PCI (Intel's Peripheral Component Interconnect open standard). PCI is already becoming the PC standard bus, and Apple has adopted it as well.

Other uses for ARM technology

ART's other function is to act as an ARM product development consultancy. The idea is to help companies new to the ARM architecture on their way to developing new products using the ARM architecture. ART will look to provide expertise in achieving hardware functionality through software exploitation of ARM horsepower. An example of this already exists in the form of a JPEG movie project, which Bondar says can deliver a 5 frames per second live video performance across the relatively slow 9600 bits per second digital channel a GSM digital phone network can currently manage. A by-product of this is the super-fast JPEG image decompressor supplied with RISC OS 3.60.

Acorn is now debt-free and has undergone its most radical restructuring for several years. With new-found flexibility to hand, Acorn should be able to re-join the ever-spiralling success of the computer market, currently growing at an average of 20 per cent a year. It's now time to deliver, but there surely isn't much more room left for further failure.

Writing on the wall for RISC OS?

It's easy to assume that Acorn has decided to write off its in-house technology. Acorn already provides the technology to enable PCs and Acorns to work alongside each other on the same network. However, Acorn has valuable knowledge and experience of primary and secondary schools requirements. RISC OS has been honed for those very markets and, despite what the RISC OS cynics might say, it has certain demonstrable advantages over Windows and the Mac in a classroom environment. You can still do things, say with classroom multimedia, which you can't on PCs or Macs of similar cost and there is plenty of education software support.

Acorn will still sell ARM-based Acorns to those who recognise they are a better bet for their needs. But soon Acorn will be able to sell own-brand PCs and possibly own-brand Mac clones to new customers in the education market. Some are already predicting that ARM-based Acorns will soon fade away, but nobody can be sure at this stage, and Acorn is emphatic that this is not the case – it still sees RISC OS as the best solution for schools, and will push it strongly over other systems. On the other side of the coin, Bondar talks optimistically of bolting a RISC OS 'personality' on top of a low level IBM-developed operating system which would endow RISC OS with features currently missing, like virtual memory and even long file names, etc.

Acorn rules the waves

Cowes-based Acorn dealer, Computer Tutorial Services, has reported that it has supplied Acorn Risc PCs and custom software once again for official use during the prestigious Admirals Cup yacht race and the Fastnet Race, generating results data and interactive information for spectators. The computers were also used for the National Express World Championships in Cowes.

Computer Tutorial Services
Tel: (01983) 294333
Fax: (01983) 298439

ICD/TES survey

Starting in January, 700 schools earned 450,000 Acorn Advantage points for getting staff, pupils, family and friends to fill in questionnaires issued by ICD Marketing Services, Acorn and the *Times Educational Supplement* (*TES*). For example, 30 completed questionnaires earned 300 points, enough to earn five primary level reading books. A large range of education resource items is available via the scheme, which is now being expanded across the country.

ICD
Tel: 0171-251 2883

Bible clip art CD-ROM

Verison 2 of a clip art CD-ROM containing 3,000 images selected specifically for religious use has been compiled by Christian Computer Art. The CD-ROM is compatible with PC and Mac machines as well as Acorns and an Acorn-specific thumbnail utility is supplied. The CD-ROM is available for £49. For more information write to Revd. Ian Gooding at 18 Larksfield, Covingham, Swindon, SN3 5AD.

OM's latest recruits

The latest services to be added to the Cambridge digital interactive TV trial (DiTV), include electronic home shopping from the Post Office and interactive TV banking from NatWest. Apart from the set-top boxes, ARM processors feature heavily in the video servers and ATM network switches used.

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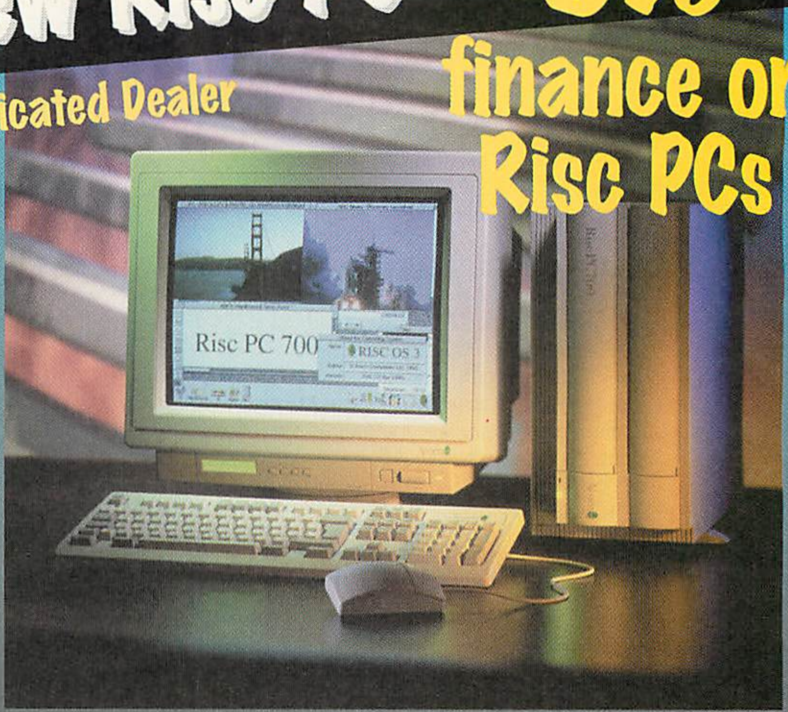
The Risc PC is the ultimate system for the home user and enthusiast, and it is now faster and better priced than ever before.

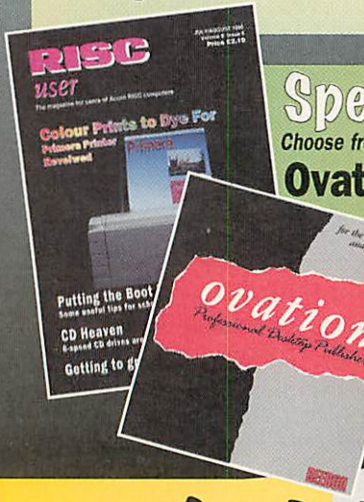
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Risc PC600 4Mb HD425, with AKF60 monitor	£1148.00
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0% APR credit is available over 20 months. Please call for written details.

The A3010 Computer (originally £424)

now just £135

There has never been an opportunity like this, a full RISC OS Acorn computer for just £135. This is a unique promotion from Beebug and is strictly while stocks last.



A3010 with optional monitor

A3010 Specification

The A3010 is supplied with 1Mb RAM (upgradable to 4Mb), RISC OS 3.1, mouse, stereo sound, two joystick interfaces and can be used with either a TV or monitor. It includes Edit, Paint, Draw, and Maestro music programs along with the game Zool and wordprocessor StartWrite. The system has a single expansion slot for hard drive or scanner etc., serial port and a bi-directional printer port.

Monitors & Upgrades	
1-2Mb RAM	£35
1-4Mb RAM	£120
80Mb Hard Drive	£145
AKF52 Monitor	£170
AKF50 Monitor	£245

Upgrades

We can offer a number of upgrades at reduced prices and fitted free when purchased with a system. For example a 2Mb A3010 with monitor would cost just £340. These systems are ideal for home and educational use and offer a very similar specification to the A3020, as used in most schools throughout the country.

Software Packs

The following packs are available when buying an A3010.

Learning Curve	Advance, PC Emulator/DOS 6	£42
Home Office	Easiwriter, Datapower, Pipedream 4, PC Emulator/DOS 6	£80
Early Years	Talking StartWrite, Flossy The Frog, Mouse In Holland, Doris the Dotty Dog, Amazing Maths	£42
Home Professional	Ovation DTP, Pipedream 3, Atelier, Type Studio, Chartwell, Chess	£35

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E-mail sales@beebug.co.uk

UK delivery £8.00. All prices are exclusive of VAT

New dealer distributor

THE recent demise of Greyhound Marketing (the company that used to distribute third-party software and hardware to Acorn dealers) left the dealer network without an obvious channel for sourcing such products, other than speaking to all the companies separately. With the Christmas season approaching, it was natural that someone would step into the breach, and Ian Copestake Ltd has emerged as a distributor for a wide range of companies.

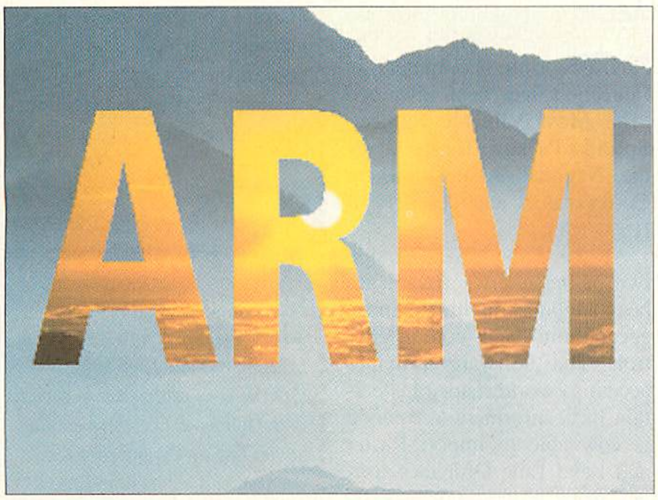
'This is a natural move for us,' explained Managing Director Ian Copestake, 'building on the many years' experience we already have in mail order. I am delighted at the response of publishers and developers which enabled us to send out a dealer price list containing 1000 titles within a fortnight. The list is still growing, and we want to hear from any developer whose products are not on it.'

Ian Copestake Ltd believes that it has put together a competitive package which will be attractive to all dealers. However, one dealer *Acorn User* spoke to was sceptical, believing that there was a potential conflict of interests between Ian Copestake Ltd as a dealer and as a distributor, and suggesting that Ian Copestake's prices were not going to interest him.

A number of third-party developers have revised their sales arrangements to make them more attractive to dealers who want to buy direct from them, effectively cutting out the role of a distributor. It remains to be seen whether Ian Copestake Ltd can carve out a niche for itself in the current Acorn market.

Ian Copestake Ltd
Tel: 0151-625 1006
Fax: 0151-625 1007

Oregan at Acorn World



The latest version of Oregan's *CineWorks* packag on view at Acorn World.

FOUR special attractions have been highlighted by Oregan Developments at Acorn World this year. The first is the latest version of the *CineWorks* digital movie editing package. Next up will be *MIDIWorks*, a professional quality MIDI sequencer. The third new attraction is *Real Time Morphing*, which is a spin-off from a project being undertaken by Oregan for the ferry company, Stena Sealink.

Oregan promises that if you visit its stand at the show, it will morph you into one of a selection of celebrities or horror characters before your very eyes. Finally, there will be the *Burn'Out* Challenge – two genuine arcade driving machines will be linked up to A5000 computers via a serial link to enable visitors to play 'The Race on the Edge', with prizes for the best drives.

Oregan Developments
Tel: 0121-353 6044
Fax: 0121-353 6472
E-mail: sales@oregan.demon.co.uk

Textease version two

SOFTEASE will launch a new improved version of its desktop publishing package, *Textease* at Acorn World.

New features include rotation of editable text and graphics, an extra-cost speech option, JPEG image decompression support on new Acorns featuring RISC OS 3.6, object linking (OLE) with *Draw*, *Paint*, *Tablemate*, *Diagramit* and *TableCalc*, new text manipulation features, an improved spelling checker, an ellipse tool and arrow ends on lines. Text and graphics can be copied and moved around the page using standard drag-and-drop operations

Prices start at £49 + VAT, with site licence options available.

Softease
Tel: (01332) 204911
Fax: (01684) 772922
E-mail: sales@softease.demon.co.uk

Clan offer is a 20:20 scheme alternative

Chris Cox, who looks after Acorn's Clan members club, has announced an alternative offer to Clan members who choose not to take advantage of the current 20:20 interest free purchase scheme. If you're a Clan member and you don't qualify for the 20:20 scheme or you prefer to pay up front, Acorn is throwing in a software development package which includes C++ and PRMs.

Taos SDK released

Tantric Technologies Co-operative Ltd has announced version 1.28 of its Taos Software Development Kit for the Acorn platform. The package contains a complete set of development utilities, Assembler, software libraries, etc. The price of £250 includes documentation and e-mail technical support and – on the Acorn kit only – a special six-chip licence. Acorn has hinted that Taos may represent a future road for the development of RISC OS.

Tantric Technologies Co-op Ltd
Tel: (01703) 230340
Fax: (01703) 230440
e-mail: tantric@cix.compulink.co.uk

SEMERC doodles

A low cost painting program for youngsters called *Doodle* has been announced by SEMERC. *Doodle* is aimed at nursery and reception learners as well as special needs students. The package is able to produce music and other sounds as well as images.

A novel feature, called RevealPics, takes the concept of colour books and adds a new slant. With RevealPics you need to colour the obscured image to reveal it. *Doodle* is priced £20 + VAT.

SEMERC
Tel: 0161-627 4469
Fax: 0161-627 2381

New faster 486 cards to be at Acorn World

A distinct sense of *déjà vu* is created by Peter Bondar's announcement that Acorn is on target to have its second generation Risc PC 486 card on sale at Acorn World in October. The new card is said to have a performance advantage over the original model of between 3-4 times, putting it in the same performance territory as a 486DX4/100. Unfortunately, Bondar wasn't able to reveal a price or detailed specification of the new card, but the higher-end models will be using the re-designed ASIC.

MkI 486 cards have been out of stock for some time, but as we went to press a consignment of 5000 cards was due to arrive imminently and this would satisfy all back orders, assured Bondar.

Looking at early Victorians



The new design for the Concept Keyboard? No – a publicity shot for *Early Victorians* from YITM. This ia new educational CD-ROM which examines the early Victorian period from 8145 onwards. The CD-ROM is aimed at Key Stage 2 history students. Major themes covered include trade and industry, transport, work, domestic life, leisure and education of the period. A powerful index is built into the CD-ROM, complementing a time lines facility and a feature which links realted topics. *Early Victorians* is set to be £69.99 + VAT when it is released early in 1996.

YITM
Tel: 0113-243 4884

Utilities from R-Comp

KNUTSFORD-based R-Comp has announced a pair of utilities which will be appearing at Acorn World. The first is *HTMLEdit*, described as the first commecial Internet Web authoring system for Acorn computers. The package, first announced on the Comms page last month, supports HTML 2.0 plus a subset of Netscape extensions. *HTMLEdit* is priced £30 inclusive of postage and packing. R-Comp's second utility is *ShortCuts*, which provide a way of automating repetitive desktop tasks like loading applications, opening work directories, viewing disc contents, etc. Batch jobs can now be created using mouse drag and drop actions and Microsoft *Windows 95* keyboard shortcuts are also featured. *ShortCuts* is priced £15 inclusive. Discounts can be expected at the show.

R-Comp
Tel: (01925) 755043
Fax: (01925) 757377
e-mail: ajr@arsvcs.demon.co.uk

New CD-ROMs

PC software specialist, Cosmi & Co. has released 20 new educational CD-ROM titles, including 13 from Yorkshire International Thomson Multimedia (YITM), which are both PC and Acorn compatible. Prices vary from £34.95 to £52.95 and cover a broad range of subjects including science, history, languages, geography and religion. The products are fully interactive and feature video clips, animations and sound.

Cosmi & Co.
Tel: (01753) 620022

Aegis award

AEGIS, a geography information package produced by The Advisory Unit; Computers in Education has been awarded 'The Most Valuable Subject-Specific Package for 1995' by the National Association for Co-ordinators and Teachers of IT (ACITT).

At the same time, version two of the *Aegis* software has been announced with enhanced accessibility and colour control. The software provides access to world maps plus certain local information. *Aegis 2* is now able to import Raster and Land Line Ordnance Survey maps. Prices start at £100 + £3 P&P + VAT.

The Advisory Unit; Computers in Education
Tel: (01707) 266714
Fax: (01707) 273684

Longman Logotron and 10/10 deal

Longman Logotron and 10 out of 10 Software have combined their educational software resources in an exclusive partnership which guarantees the long-term development and distribution of 10 out of 10's educational software line. Longman Logotron claims that the tie up with 10 out of 10 will mean customers will need not look anywhere else for pan-curriculum software.

Longman Logotron
Tel: (01223) 425558

ANT Internet Suite

ANT Limited's eagerly-awaited Internet Suite will be launched at Acorn World. The integrated Internet software package will include a dial-up TCP/IP utility, *Fresco* – a fully featured Web browser with *Netscape* extensions, *Marcel* – a mail and Usenet news manager with MIME (multi-purpose Internet mail extensiions) capability and various utilities for ftp transfers, etc.

ANT Limited
Tel: (01223) 567808
Fax: (01223) 567801
E-mail sales@ant.co.uk

SEMERC launches SENSOR

SEMERC has launched SENSOR (Special Educational Needs Service with Online Resources), a special advice line on the Internet for children and adults with special needs.

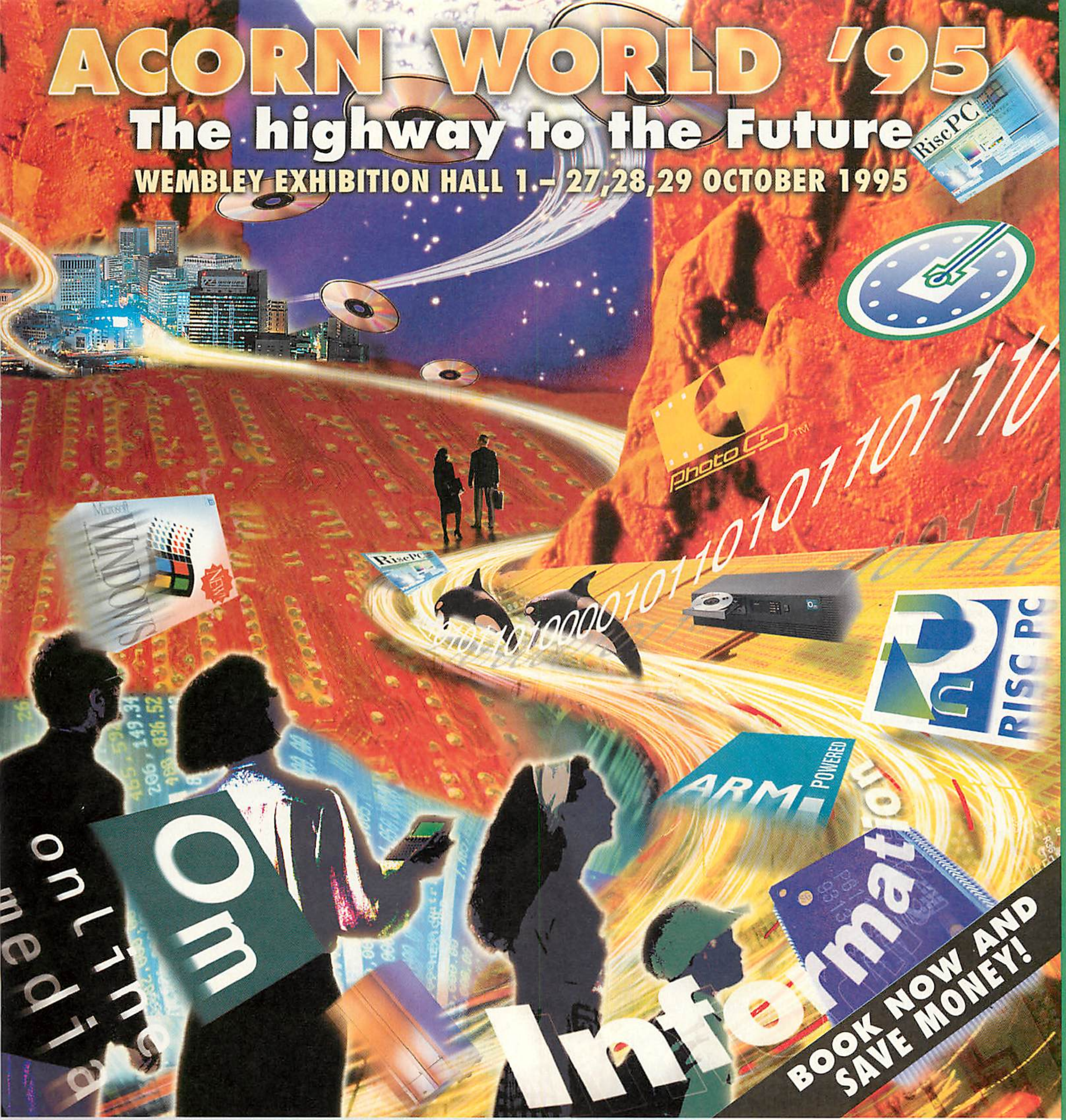
The service was developed with British Telecom as part of the latter's new CampusWorld service which has evolved from the old Campus 2000 online service for schools. SENSOR is a subscription service and subscribers can post two online queries about special needs IT for no extra cost. Subsequent queries are charged at £12 a go.

Replies are expected to arrive via the Internet within 48 hours. There are also downloadable resources on the SENSOR database.

SEMERC
Tel: 0161-627 4469
Fax: 0161-627 2381

Acorn User diary

Date	Event	Venue	Contact
11 Oct	Colton software demo for SARC	Ipswich Central Library	Suffolk Acorn RISC Club (SARC) tel: (01473) 728943, fax: (01473) 270643, e-mail: sarc@octopus.demon.co.uk
27 – 29 Oct	Acorn World '95	Wembley Exhibition Hall 1	Ticket hotline: (01933) 441448
12 Nov	Selective Computer Show	Kegworth Hotel	Selective Computer Services, tel/fax: (01332) 690691
24 Nov	Resource '95 IT show	Doncaster Racecourse Exhibiton Centre	Resource: (00509) 672222
10 – 13 Jan	BETT '95	National Hall, Olympia	Ticket hotline: 0181-984 7711
7 – 9 March	The Education Show	Halls 11 & 12, NEC, Birmingham	Ticket hotline: 0181-984 7711



Log on, hook up or plug into the Information Superhighway. Whichever way you want to enter this new world, Acorn World '95 promises to be the best event of the year. Come and get real, hands-on experience of all the latest desktop products. Learn from the experts at the live theatre presentations. See the revolution in home services being created by Acorn's "Set-Top Box" technology. Plus jugglers, face painting, a games arcade, competitions with prizes. A FREE crèche and over 100 exhibitors showing what's new and exciting in the world of IT.

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Windows screen shot ©Microsoft Corporation

Acorn

The Formula 1 package for original painting and photo-retouching. Studio24 leaves the competition at the starting grid with its power and performance. The FREE updating service ensures that once you join the Pineapple team you will never have to pay for the latest model!

Studio24



This picture is original artwork produced using Studio24 by Walter Briggs of Kingfisher Graphics

A demo version of this package is available together with many example pictures and a complete copy of the manual. Price £5.87 inc vat (Refundable against purchase of the full package)

Full Package Price £146.87 inc vat

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Virus Protection Scheme

The Pineapple Software Virus Protection Scheme provides the most comprehensive protection available against computer viruses. !Killer together with VProtect will detect and remove all of the currently known 71 families of virus (over 100 viruses in total). Because new viruses are being discovered all the time our virus protection scheme will provide you with 3-4 updates of the software each year. We can also offer immediate advice by 'phone. !Killer can scan any filing system or device including floppies, harddiscs, networks, even CDRoms. All types of compressed file can also be scanned. All infected files are fully restored without having to reload from master discs or backups.



Don't wait until you discover you have a virus! Use the software that Acorn themselves use to check for viruses.

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Acorn Computers



We are fully authorised Acorn dealers and we can supply all Acorn computers and upgrades at very competitive prices, usually by return of post. All Acorn computers are supplied with free membership of the Virus Protection Scheme and a special offer on our Studio24 painting package of just £94.00 inc vat.

Please see our other advert for details of computer prices.

We can also provide professional advice and assistance to help you choose the right Acorn system.

A4 Colour Scanners



New from Pineapple the superb IX-4015 A4 flatbed Canon colour scanner. Supplied with Imagemaster and Twain software this scanner makes the perfect companion for our Studio24 re-touching software. With a basic resolution of 400 x 800 dpi this scanner is unbeatable value.

IX4015 with Imagemaster & Twain	**£675.00**
As above + Studio24	**£769.00**
SCSI interface + cable	**'phone**

Epson Colour Scanners

Also supplied with ImageMaster and Twain software these models can work on either SCSI systems or via the Parallel Port. Basic resolution of GT8500 is 400dpi and the GT9000 is 600dpi

GT-8500	**£599.00**	**GT-9000**	**£733.00**

Pineapple Software

Suites 13 & 14
South Park Business Centre
310 Green Lane, Ilford
Essex IG1 1XT

Tel 0181 599 1476 Fax 0181 598 2343

Terms:- All prices *include* 17.5% vat. Carriage FREE to mainland U.K. Phone for quote outside U.K. Official orders, cheques and all major credit cards accepted. Money back guarantee on all products.

For demonstrations of most of our advertised products why not come and visit us in our new offices (easy parking) where you can see most of the Acorn range of computers and other hardware in action.

Graphics

Merlin ray-tracer launched

A COUPLE of months back, the imminent arrival of two new modelling and ray-tracing packages was reported. Of these two bubbling beneath the surface in beta-test guise, the first to emerge as a full release is Evolution Computer's *Merlin* package. There are two main components to the application, one for modelling and the other for rendering.

The modelling software is very intuitive and offers comprehensive control over construction of primitives and a number of advanced solids effects like a step, rotate and repeat tool and an interesting fractal object generator.

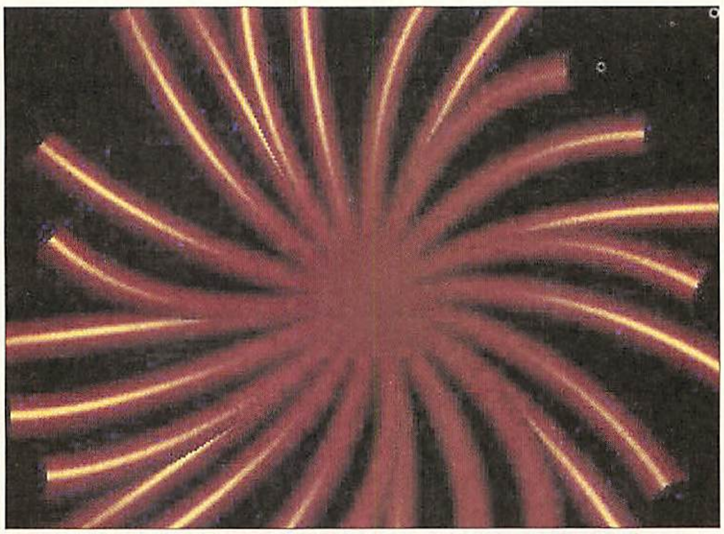
The code is still a little unstable but unlike many packages which fall flat on their face whenever they are asked to do something fancy, *Merlin* is the kind of application that many graphics enthusiasts would love, despite its incomplete functionality at present.

The modelling application is simple to use and with the very clearly typeset manual, all of the functions are made easy to understand.

One thing which is surprising about the package is the speed of redraw in the modelling package. Though not particularly responsive to rotational adjustments in previewing the scene with just one object included because it does not redraw 'on the fly', *Merlin* does not decrease in its vector plotting speed by any perceivable amount, even with 30 complex objects with 1000 polygons in total all Gouraud-shaded and illuminated. The only disadvantage in delaying the plotting of the 3D scene until the mouse button is released after click-dragging to rotate the view is that it takes many more smaller movements of the mouse to appreciate the 3D environment which you have created. Other packages – including 2D graphics applications – begin to plot the scene on the fly, albeit in line form; this would add greatly to the power of the package.

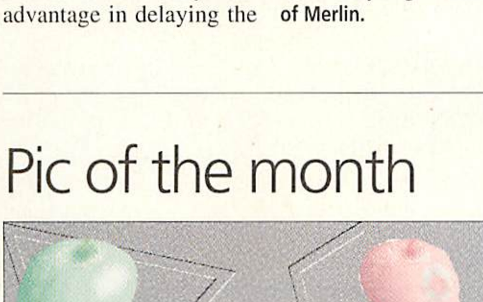
Regarding future improvement of the package, Evolution Computer is very eager to hear from all its users of *Merlin* about any bugs and features which they may want fixed and included respectively. This certainly shows that at least someone out there is interested in getting ray-tracing to thrive on the Acorn. But where is that elusive ARM FPU? A full review of the *Merlin* modelling package and the ray-tracer will appear soon.

Evolution Computer
Tel: +49 27 613062



Fractal Object generation and high quality rendering are two of the key features of Merlin.

Pic of the month



ALAN BLOOM is this month's winner with this image which has a very futuristic feel about it. Alan, aged 14, used an A3010 with a hard disc, 2Mb of RAM and a telly for a display to create this picture in *ProArtisan 2*. The composition was constructed by drawing directly onto the canvas and filling the apple with green, followed by colour shifting, copying and distorting the apple a number of times. Having cleverly designed the backdrop with the polygon and embossing tools, the apples finally found their resting place, some looking decidedly the worse for wear. Would you eat a purple apple?

£20 is the prize and remember to phone Digital Darkroom (0181-311 2001) to claim your free slide recording.

Universal Image

Universal image is a package designed to complement the fantastic *ImageFS* image file filter. This wee little program sits on the icon bar and, once clicked, reveals a window, automatically adjusted to the size of your display, into which you can throw any old image from Workstation, PC or Mac. When you've done this, a (metaphorical) thumbnail appears. Double-click on the thumbnail and the full image is downloaded from disc into a destination package. Spin-offs from this include vector file previewing, OPI picture replacement and ultra-fast JPEG decompression (with RISC OS 3.6).

ImageFS2 is coming on in leaps and bounds also, with such features as the immensely useful *TinyView*, a growing list of filterable file types and a yet more improved user interface.

DIY power tools

Simon Heys, having failed to find the tools on the Acorn which he wanted, designed his own. Both applications will be whisked off to *INFO and featured there, but one of them, of great interest graphically, is called *Pic>>Dots* and applies very interesting halftone effects to otherwise boring bitmaps with a wide range of variability.

Goodbye Mark

I started off in *Acorn User* as just a little amoeba, doing cover disc icons. From back then in 1993 until now, Mark Moxon was my boss: firstly as Technical Editor in Redwood Publishing, moving to Editor through *Acorn User*'s stint at Europress and ending up here at IDG. I would like to wish Mark all the best in his world-wide escapades and thank him for all his help and friendship. Farewell.

Contacting me

You can contact the Graphics page by writing to me, Jack Kreindler, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: jack@acornusr.demon.co.uk.



Termite

Termite is priced at £79.95+vat. (£4+vat p&p)

You must have a hard disc and RISC OS 3.1 or later.

You will need a modem (9600bps or faster recommended), we sell a selection of US Robotics modems costing approximately £100–£300.

You will also require a subscription to an Internet provider, usually costing between £10 and £15 per month.

Not been convinced by all this *Internet hype*?

Confused by the *jargon*?

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If you can't wait, you can send off for our *information* disc.

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Furzefield House, Furzefield Road, Beaconsfield, Bucks., HP9 1PQ, United Kingdom.

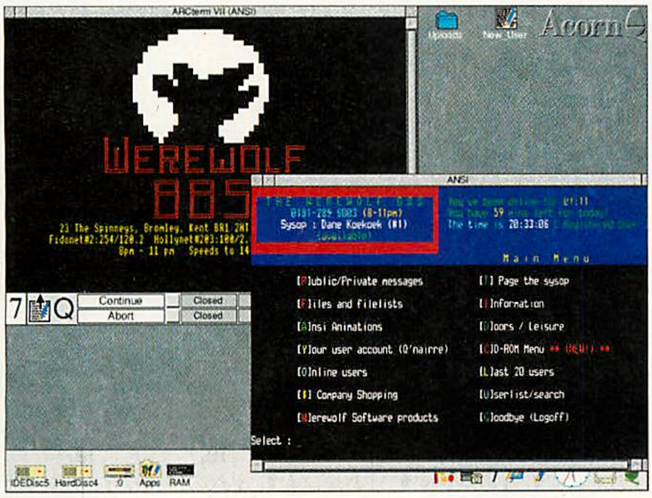
If you already have Internet access, visit our new web pages at http://www.u-net.com/~doggysft/ for full details of this and other DoggySoft applications, plus latest versions of our PD for download and a special games–cheating area.

Howling at the moon

THE Werewolf BBS is located in Bromley, Kent, which is a town I used to know well as I was born there. Bromley has changed a lot since that event which was many years before the birth of Dane Koekoek, Sysop of Werewolf. Dane is an enthusiastic programmer with an interest and emphasis on comms, so Werewolf BBS is an ideal outlet for his ambitions.

The system runs *ArmBBS* on an A3000 with 4Mb of memory and a Cumana SCSI card with 540Mb and 40Mb hard discs. One of the features of the BBS is the ability to access a Sony CD-ROM drive via Chris Jackson's *CD Explorer* 'door', which offered me the contents of the *Acorn User* cover CD-ROM. You can also request access to the Uniqueway Risc Disc or several other graphics CDs.

Werewolf BBS has all the usual Acorn interest file and message areas, including access to the Acorn FidoNet echoes and comp.sys.acorn family newsgroups via its current FidoNet boss, Rich in Paradise BBS. Dane expects to gain a full Fido node status shortly, and already has nodeships as Hollynet#203:100/2.0 and his own net Wolfnet#225:100/1.0.



A BBS where there's a wolf.

The programming and business aspirations of Dane and a group of friends have brought about Werewolf Software, with its principal product called *CDTracker* written by Malcolm Knight. This is an advanced audio CD database and player for Acorn computers. It seems that everyone wants to run his or her own company these days, and do it before the age of 16.

The Werewolf BBS is as yet a part-time system in operation between 8pm and 11pm sharing a voice phone line. In case you're wondering as I was, 'Koekoek' is a Dutch name, and is the word meaning and pronounced about the same as 'cuckoo', a state of mind that certainly does *not* apply to Dane Koekoek or Werewolf BBS.

The Werewolf BBS
0181-289 6003

I can download so why can't I upload?

I FREQUENTLY find this question in my mailbox. New callers to bulletin boards are keen to download files and usually do so without problems. But when attempting a first contribution to the filebase by uploading, the transfer sometimes fails with file transfer errors and 'retries' reported by the terminal software.

Incorrect flow control settings on the terminal software or modem are usually responsible for this phenomenon. If the computer sends data into the modem's buffer quicker than the modem is sending it up the phone line, it's easy to see that the buffer will eventually overflow, and data will be lost. Flow control is the monitoring and control of data flowing into or out of the modem.

There are two methods of flow control, in software or by hardware. In software control, special codes are inserted in the data stream to indicate when to stop and restart sending to keep the modem buffer from overflowing. We rarely use this method because files themselves could contain these control characters, which would erroneously invoke flow control.

Hardware control uses lines in the modem cable to signal the computer to stop sending when the modem's buffer is 90 per cent full and start again when it drops to 50 per cent full. Both the modem and the terminal software must usually be set to use the hardware method, called RTS/CTS flow control.

So why does downloading work even if hardware flow control is off? This is because the line connection speed is almost always lower than the modem-to-computer (DTE) speed, so the modem's buffer never completely fills up with incoming data and it is being emptied faster than it is being filled.

A typical setup will have a DTE speed of 19200bps with a 14400bps modem. So when the computer is sending data to the modem, as in uploading a file, the buffer fills up more quickly than it empties, and data will be lost without flow control.

Most modems default at switch-on to hardware flow control, but it can become turned off if the wrong modem driver gets selected or during experiments with the modem configuration. For USR modems, the correct internal settings are &H1 and &R2 – check with ATI4. For Hayes modems &K3 should be set – check with AT&V. Check your manual for other makes.

Fantasy Island

Island is a multi-user game which has become popular with Acorn users connecting through Demon Internet using Telnet. Ongoing work on the game code is adding new features and eradicating almost all known bugs. *Island* is completely non-profitmaking and there is no charge for playing. To give it a try, type

```
telnet teaching4.physics.
ox.ac.uk 2092
```

from *KA9Q*, or use this address in the Telnet option from other Internet access packages.

Mirrors down under

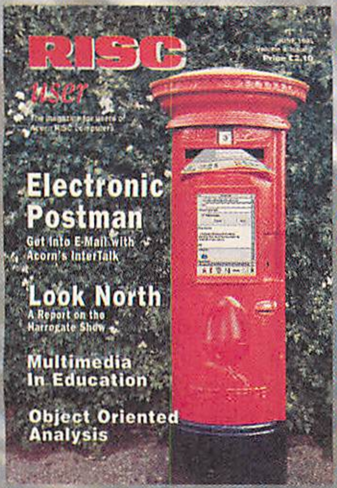
The Australian branch of the Internet AARNET (Australian Academic Research NETwork) has started mirroring the major UK software archive sites (Demon and HENSA) into its archive machine in Melbourne, Australia. Download performance is much better within the continent than obtained by calling the UK, as well as overcoming the HENSA access restrictions. These use-or-lose archives are available as: ftp://archie.au/micros/archimedes/demon and ftp://archie.au/micros/archimedes/hensa

Acorn User Website

Don't forget to visit our own *Acorn User* World Wide Web pages. There's information about past and upcoming features in the magazine, Acorn computers and its market, an Acorn buyer's guide and using Acorns on the Internet. More pages are being added all the time – eventually the intention is to get all the reviews from back issues of *Acorn User* onto the site. The URL is: http://www.idg.co.uk/acornuser/

Contacting me

You can contact the Comms page by writing to David Dade, Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: DaviD@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181-654 2212.

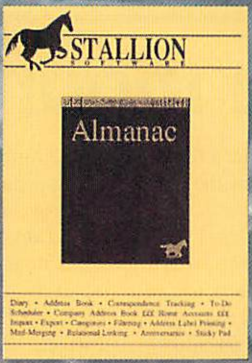


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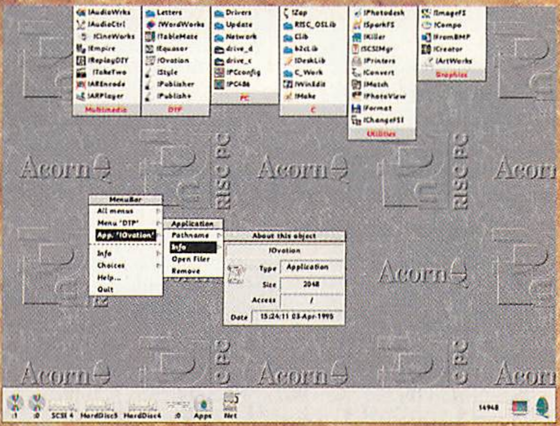
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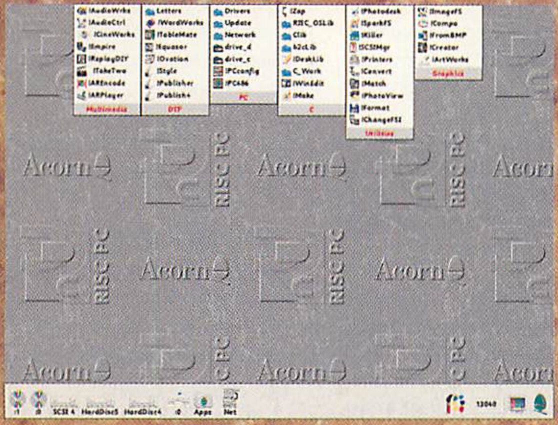
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A mechanical makeover

THIS month we return to a newsletter for the focus of our makeover. Jack Cluer produces the Volvo Owners' Club newsletter on his A310. It runs to around 30 pages of A5 and consists mostly of letters about various topics, with a brief comment from the editor (Jack) tacked onto the end.

There's a lot of information to cram in, so a small type size is used and a basic two-column format is adhered to. Jack manages to cram between 550 and 650 words onto a page which would be pretty good going for an A4-sized page, let alone one half the size. As a result, the text looks pretty dense and with so much information to deliver, the pages have to remain fairly text heavy.

A wide gap between the columns helps prevent the reader's eye running across the page rather than down it as they read. The use of type as an illustration in the 30mph note doesn't help break the page up much, and the use of only one font (Trinity) means headlines, bold sections and so on are difficult to distinguish. The copy also runs awfully close to both the inside and outside edges of the pages.

The new page grid has a 5mm gutter added to a 7mm side margin. The top and bottom margins are slightly more (12mm and 10mm respectively) to help frame the copy on the page. The page had to be split horizontally or vertically for the separate letter and comment sections. I went for a vertical split which gave about 70 per cent of the page to the letter.

I stuck to Trinity for the main copy because it remains very readable when small. I did, however, add a spacing of 3pt onto the 9pt text below each paragraph. An odd size, I know, but I didn't want to lose too many words off the page. I ended up doing a little judicious editing to make things fit as it was.

The paragraph space works better than the original indents at breaking up the main body of the text. The comment was a little short for a full column, but the 30mph illustration filled the space nicely.

The comment column uses a 10 per cent grey background to help it stand out. In order to keep the comment text readable it's been made bolder and also had full justification turned off. Full justification doesn't look too good in narrow columns since words can space oddly, leaving unsightly gaps. The comment frame also had an internal indent of 1mm to keep the text in from the edges a little. Use a background without an indent and some of the outside letters will run right to the edge of the box.

The Frutiger headlines and reversed text mean it's easier to tell what the page is about at a glance, and the 2pt lines that frame the page help with continuity from page to page without taking up too much space.

The initial intro to the piece is separated off to add emphasis to it without making the text larger. The page is still pretty dense but I ended up only trimming 15 words. Shame the editor never manages the same trick with my columns. [Any more of your lip and I'll 'trim' the whole column! – Ed].

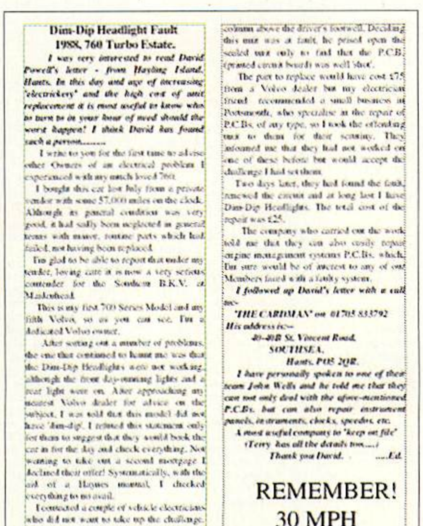
FOOTNOTE

A gutter is a gap that only occurs on the inside edge of a two page spread. So on a left-hand page it's on the right-hand edge and vice versa. This extra gap helps prevent text vanishing as the page bends in and gets closer to the centre. It's not massively significant on thin pamphlets of 20 or 30 pages, but take a look at a 200 page book and you'll notice the gutter is pretty large since – with the book being thicker – the pages start curving earlier, and any text on the curve would be difficult to read.

Use of graphics

It really is worth spending time getting the graphics on your pages just right. The car on the makeover isn't a Volvo but it *is* the right kind of illustration. A side-on or head-on view would look far less active. I chose this particular image because it points into the page.

For the real magazine it'd be worth scanning in some photos of the relevant car and tracing over them in *Draw* to produce some suitable line art that could be re-used in each issue. The Volvo logo on the makeover was scanned in hurriedly on a hand scanner by me. Once again, for the real thing it's probably worth getting a decent scan done and converting it to a *Draw* file since they're more flexible and can be combined more easily with other illustrations.



Dim-Dip Headlight Fault
1988, 760 Turbo Estate.

I was very interested to read David Powell's letter - from Hayling Island, Hants. In this day and age of increasing 'electrickery' and the high cost of unit replacement it is most useful to know who to turn to in your hour of need should the worst happen! I think David has found such a person........

I write to you for the first time to advise other Owners of an electrical problem I experienced with my much loved 760.

I bought this car last July from a private vendor with some 57,000 miles on the clock. Although its general condition was very good, it had sadly been neglected in general terms with minor, routine parts which had failed, not having been replaced.

I'm glad to be able to report that under my tender, loving care it is now a very serious contender for the Southern B.K.V. at Maidenhead.

This is my first 700 Series Model and my fifth Volvo, so as you can see, I'm a dedicated Volvo owner.

After sorting out a number of problems, the one that continued to haunt me was that the Dim-Dip Headlights were not working, although the front day-running lights and a rear light were on. After approaching my nearest Volvo dealer for advice on the subject, I was told that this model did not have 'dim-dip'. I refuted this statement only for them to suggest that they would book the car in for the day and check everything. Not wanting to take out a second mortgage I declined their offer! Systematically, with the aid of a Haynes manual, I checked everything to no avail.

I contacted a couple of vehicle electricians who did not want to take up the challenge. Then I was recommended to another one who accepted it. Within ten minutes he had located the problem, the 'Dim-Dip Relay' which is located alongside the steering column above the driver's footwell. Deciding this unit was at fault, he prised open the sealed unit only to find that the P.C.B. (printed circuit board) was well 'shot'.

The part to replace would have cost £75 from a Volvo dealer but my electrician friend recommended a small business in Portsmouth, who specialise in the repair of P.C.Bs. of any type, so I took the offending unit to them for their scrutiny. They informed me that they had not worked on one of these before but would accept the challenge I had set them.

Two days later, they had found the fault, renewed the circuit and at long last I have Dim-Dip Headlights. The total cost of the repair was £25.

The company who carried out the work told me that they can also easily repair engine management systems P.C.Bs. which, I'm sure would be of interest to any of our Members faced with a faulty system.

I followed up David's letter with a call to:-

'THE CARDMAN' on 01705 833792

His address is:-

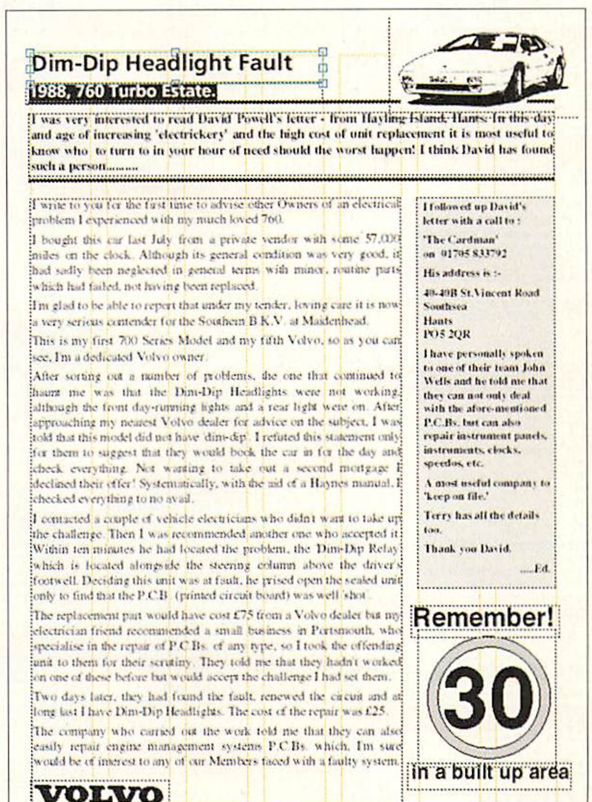
40-40B St. Vincent Road.
SOUTHSEA.
Hants. PO5 2QR.

I have personally spoken to one of their team John Wells and he told me that they can not only deal with the afore-mentioned P.C.Bs. but can also repair instrument panels, instruments, clocks, speedos, etc.

A most useful company to 'keep on file'
(Terry has all the details too.....)
Thank you David. .....Ed.

REMEMBER!
30 MPH
IN A
BUILT UP AREA!

The pages have a wide gap between the main column but only one font is used for the main copy which makes it difficult to distinguish one bit of text from another.



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Southsea
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A most useful company to 'keep on file.'

Terry has all the details too.

Thank you David.

.....Ed.

Remember!
30
in a built up area

VOLVO

page 24

The unbalanced columns suit the long/short nature of the main letter and brief editors comment. The picture isn't, alas, a Volvo. Though I had several none were facing forward at an angle like this one which helps it project into the page.

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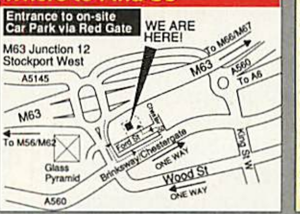
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Access VISA SWITCH

NOV 95

EventShell coding tool

EVENTSHELL is a well established but little known programming aid, coded by desktop programmer Paul Hobbs. A recent correspondence from Paul prompted me to feature *EventShell* which does not seem to be widely recognised on the scene.

The idea of *EventShell* is to provide a basic framework for a desktop programmer. It handles all the mundane jobs like opening windows and handling menus. All the programmer has to do is decide what should happen when a range of desktop events occur (like changing mode for example) and *EventShell* will do the rest.

EventShell isn't a quick fix for beginners without any programming experience, but if you can handle a bit of BASIC, and want to write Desktop programs with ease, *EventShell* is probably what you need. Despite writing many programs from utilities to demos, I've never written anything for the Desktop, but I have to admit that *EventShell* is tempting me to have a go. I like the idea of getting straight down to coding what you want the program to do, rather than having to muck about with all the usual desktop handling with SWIs left, right and centre.

Paul is aiming to have version 2 of this excellent software ready by the end of this year. This will include support for more events, an event editor and improved documentation.

EventShell is a Shareware program, with a small registration fee of only £5 or 15DM and can be obtained from: Paul Hobbs, Rheinpfalzstrasse 2, 85049 Ingolstadt, Germany.

New issue of disc magazine RiscMag adds to the scene

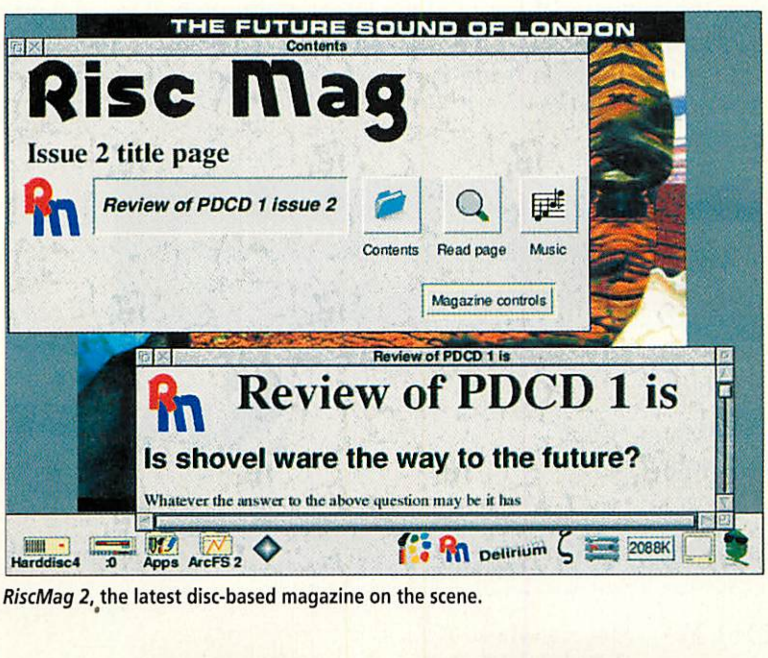
THE disc magazine scene seems to be hotting up quite nicely, with new issues of both *Spectrum* and *New Dawn* on the way, as well as a brand new release from Software 7. Despite having a pretty unoriginal name (something without RISC, ARM or Arc in the title would be nice), *RiscMag 2* is quite a good release.

The magazine is based around an attractive Desktop viewer that gives fast access to all the articles and displays. There are a few little niggles like the article windows with massive gaps at the bottom, but all in all it's not too bad.

The articles are the usual disc mag fare, but are a little bit thin on the ground. The magazine is certainly worth a look, but it needs more input on the textual side before it can rate alongside mags like *Spectrum*.

If you're interested in contributing to or receiving *RiscMag*, write to: Software 7, 15 Stewarton Drive, Cambuslang, Glasgow G72 8DF.

It's nice to see some new groups forming on the scene, but unfortunately there still don't seem to be that many. As the manager of a programming group myself, I'm convinced that it's the only way to go when producing quality software involving code, graphics and music. There seem to be so many individual programmers out there, but not many of them are working together. Hopefully, projects like PD Unlimited, run by John Stonier on the Digital Databank BBS, will bring some more teamwork onto the scene. If you're starting up a new group and want some publicity, get in touch at the usual address.



RiscMag 2, the latest disc-based magazine on the scene.

GTAC support

Andrea Gallo, author of the *GTAC* adventure game designer reviewed in the August issue of *Acorn User*, is now on the Internet. Andrea can now answer any questions or queries about GTAC by e-mail at andrea.gallo@st.com

QTMplay

Chris Rutter has put together a very nice front-end for *Acorn User's QTM* music player program. *QTMplay* features all the usual controls, as well as a carousel and special control window that can be set to force its way to the front on the Desktop. Chris's program is a great front-end that will nicely fill the gap until the release of the next *Acorn User* front-end.

Elisei online

Frederic Elisei, ArmTech's coder and author of those amazing gouraud shading routines that featured on the *Acorn User* cover disc last year now has his own Web pages. Check out http://droopy.imag.fr/~elisei/ for more information. Frederic can be e-mailed at elisei@imag.fr

Naked PD

Naked PD is a well established library, run and maintained by yet another Dave. Are there any Daves on the scene who don't run libraries?

Naked PD has around 250 discs, and prides itself on having a quality if fairly small range of PD. The catalogue is very detailed, providing plenty of information on each of the programs available. The library also offers a 24-hour helpline for users having problems with any of the PD bought from the library. Contact proprieter Dave Ratcliffe at DCR95@axprl1.rl.ac.uk on the net, or by snail mail to : Naked PD, 'Fayence', Fulford Road, Fulford, Stoke-On-Trent, Staffs ST11 9QT. The helpline can be called on either (01782) 398689 or (0850) 729030.

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP. Or preferably, by e-mail to quantum@digibank.demon.co.uk or online on the Arcade BBS.

The paperless office

I RECENTLY shredded up a pile of *Independent* newspapers. My family had been complaining to me about how they were littering up the lounge, so I was forced to cut them up and put them on the compost heap.

That, perhaps, sums up one of the main problems with today's society – we have so much paper hurled at us through the door, the fax machine etc.

There are a number of ways to cut down on paper usage and storage. It never seems to amaze me how many businesses keep printed copies of letters. My father does this but I can assure that I leave them on my hard drive.

This is all very well and good but what about all those letters which come through the door? They are presently wasting my bedroom space in folders. One solution – for letters not required as receipts etc. – is to scan them into a computer. Then an OCR package can be used to convert them into text.

So you've got them into your Acorn; how do you store them? The simplest solution is *Knowledge Organiser 2* from Clares Micro Supplies, costing £79 + VAT. This is a free-text database, which means it is a database especially designed for storing text files, whereas conventional databases are field-oriented. Moreover, such a program is ideal for filing away electronic mail.

Hands up everyone whose letterhead contains a graphic. With Colton's *z*-range of packages a graphic can be stored separately from documents. This has the result that space can be saved if more than one document uses that graphic. However, *Impression* has not possessed such a feature. So what can you do to save space? Set up your letterhead so that all the elements that are the same in every letter (e.g. your address, logo etc.) are in their own frames. Save your letterhead and when you come to type a letter, enter the text into the page's master frame. Then, to save your document, use the 'Save text story' option in the File menu (keep the Styles option on). When you wish to view the letter again, load up your letterhead and drag the text file into the page's master frame. Because you only have one copy of the letterhead on your hard drive, you can save a considerable amount of space.



An OCR package such as Beebug's *Sleuth* is essential for a paperless office.

A fax modem, coupled with a piece of software called *ArcFax*, can send faxes as well as files. Put simply, in the same way you print a document on your laser printer, you can send it to someone else's ordinary fax machine. What's more, you can also send actual files – like a sprite or *Impression* file – to anyone else with a copy of *ArcFax*. You are also able to receive faxes from conventional fax machines – you receive them as a bitmap which you may want to convert into text with an OCR package. *ArcFax* is published by David Pilling Software.

Of course, you will not be able to send faxes of documents already on paper – to do this a scanner is required, although *ArcFax* interfaces with David Pilling's *Twain* scanner software easily.

Beebug
Tel: (01727) 840303
Clares Micro Supplies
Tel: 01606 48511
David Pilling
Address: PO Box 22, Thornton Cleveleys, Blackpool FY5 1LR

New version of Impact

BY the time you read this, Circle Software (tel/fax: (01793) 770021) will have released *Impact 2*, a major update on its previous *ImpactPro* database. Features will include a spreadsheet-style listing of databases, user-selected filters (allowing you to select records randomly and give them a filter name), and a button bar. Furthermore, the labelling facilities will now be automatically handled by a separate utility called *LabPrint*. Apparently, *LabPrint* consists of the design and printing parts of the excellent *LabelStar*.

Circle Software describes the program as having a new 'jargon-free friendly interface.' Other minor enhancements include support for 15-bit and 32-bit deep sprites, string handling in calculation fields, default (calculated) field values, global find and replace, range limits on numeric and date fields, as well as many new field types. The worst new feature appears to be the price – it is now £95 + VAT. However, you are effectively getting *LabelStar* in the price. Moreover, Circle Software considers *Impact 2* as now competing against products like *Squirrel* and *Recordz*. Whether it will be as good as Circle says still remains to be seen. Watch out for a review in a future issue

UpdatING ProjectING

By the time you read this, Advanced Computer Products will have added a button bar to its *ProjectING* project management package. I know of a large number of people who want project management software which can also produce Gantt charts – myself included. So where is such a program and why must I use a PC to produce the charts?

Advanced Computer Products
Tel: (01256) 56666

Take your share

The Acorn World show at the end of October will see the official release of *Shares* version 5 from Apricote Studios. The new version will feature capital gains tax calculations as well as linear, logarithmic and 'point and figure' graphs. Apparently, the latter is used all the time in America, but not very much by us Brits.

Apricote Studios
Tel/Fax: (01354) 680432

PC card printing

If you are having trouble printing from the PC card, the solution may well be quite simple. There are two possible culprits. The first is an option in *PCConfig* – make sure that 'Direct parallel port support' is *not* ticked. The second culprit is your *Impression* dongle, assuming you have one. When your computer is switched on, the dongle can scramble the printer port's output. To rectify this, load *Impression* itself.

DataPower delayed

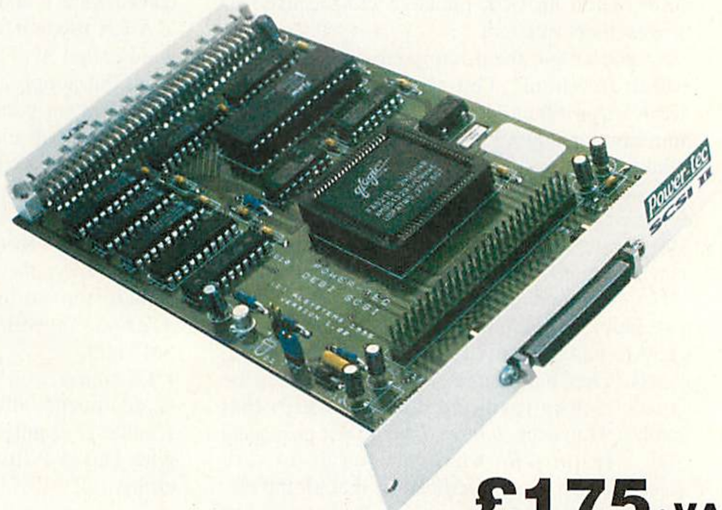
Iota Software has been forced to postpone the second version of *DataPower*, its outstanding database, until the BETT show in January.

Iota Software
Tel: (01223) 566789

Contacting me

You can contact the Business page by writing to me, Alex Singleton, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: alex@acornusr.demon.co.uk.

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Measurement and control

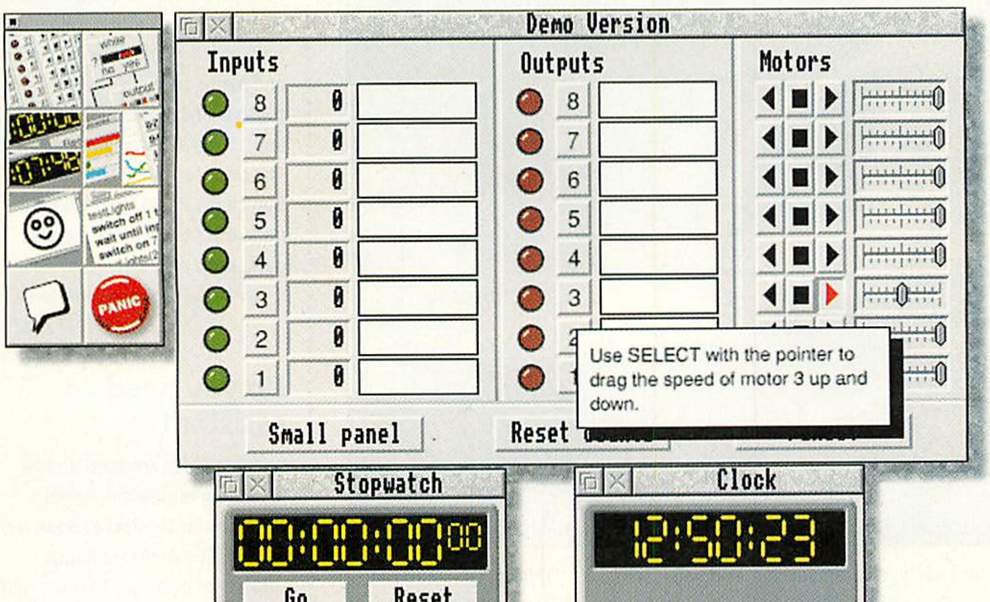
MEASUREMENT and Control is a major area of Information Technology at all key stages, but it seems this area of the National Curriculum is not being covered as well as some of the others parts. This is partly due to the perceived high cost of equipping a classroom with control hardware, and partly due to a desire on the part of many Information Technology teachers (myself included) not to get involved with rolls of cable, drawers full of tiny electronic oddments and a soldering iron.

However, this need not be the way to deliver the control. *Total Control* from Armstrong Walker is designed to work with an interface or 'control box' as it has become known. Apart from giving full control of all inputs and outputs, *Total Control* has a built-in stopwatch, clock and bubble help which provides on-screen help for *Total Control* and any other active desktop application. It also has a powerful syntax-aware programming language which is entered in its own editor. The hardware supplied by Armstrong Walker features the usual protection against static, overload and short-circuit. It is housed in a sturdy metal case which matches the screen-image.

The cost of this equipment represents excellent value for money – a very well designed and manufactured product. Prices are £100 for the software only (which will not control hardware), £150 for the software (which will control hardware), £290 for the hardware only, and £380 for the complete kit of hardware and control software.

Still on control, Sherston is currently producing so much software that it's difficult to keep up. Anyone who has used Sherston's *Crystal Rainforest* will know it is an adventure based on Logo. *Crystal Rainforest II* is not an update of the original, but is an entirely new product which adds the same fun dimension to control. The location and characters are the same and will be very popular with KS2 children. There is a demo version of *Crystal Rainforest II* on this issue's cover disc.

Armstrong Walker
Tel: 0191-201 2158
Sherston
Tel: (01666) 840433



Total Control provides a complete control interface.

Training from Leeds centre

THE Leeds Education IT Centre offers information, advice, training and support to schools and to anyone who uses an Acorn computer. The centre owns a reference library of some 1000 titles of RISC OS software and has a telephone help line. An annual subscription offered to schools (99p per pupil) and to families (£40) entitles unrestricted use of the telephone help line and unlimited opportunities to visit the centre library to study software and other resources. Subscribers are eligible for significant discounts on training, software sales from selected Acorn publishers and all other services. For an information pack please contact Lynne Jordan, Information Officer on 0113-278 2762 or at LJordan@aecleeds.demon.co.uk

Secret society

Following on from a previous broadside on the ridiculous lack of co-operation Rob Lytton received when attempting to distribute machine readable copies of the National Curriculum, I have received several comments. All but one said this type of co-operation was typical and that it extended to other Government data such as the national census; small extracts of which could be of enormous use to schools.

This seems to be in stark contrast to the US which appears to make such data available to everyone as a matter of course. The difference will be highlighted when the Internet becomes more widespread and we find we are able to access data of this type from other countries, but not our own.

Computerising the library

A recent letter from primary school teacher Paul Harrigan asks about computerising the school library. Is it possible with Acorn computers?

Yes, of course. Microlibrarian produces a program for Acorn computers which includes every feature normally found in a good public library, including the facility to generate letters to borrowers with overdue books. Depending on which version you buy, there is also the facility to read users' library cards and books from a bar code, and the addition of a remote terminal allowing students to interrogate the book bank to find the book they want and see if it's currently available. This is the system we have in my school and as soon as space permits, we'll feature a full article on setting it up and running it.

In the meantime, Microlibrarian Systems can be contacted on 0161-449 9357

Contacting me

You can contact the Education page by writing to me, Geoff Preston at Acorn User, Europress Publications, Europa House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: gpreston@arcade.demon.co.uk

The portable market

THE A4, when it was released three years ago, was an exceptionally powerful notebook computer. However, times do change and three years in the computer industry is an incredibly long time, yet Acorn hasn't as much as hinted as to when we can expect a new notebook.

The technology is there. Acorn has access to ARM Ltd's excellent ARM7500 which is used in Acorn's new A7000. Large capacity 2.5in hard discs are available at increasingly low prices and the operating system has the necessary support for portables built in, so what's the problem?

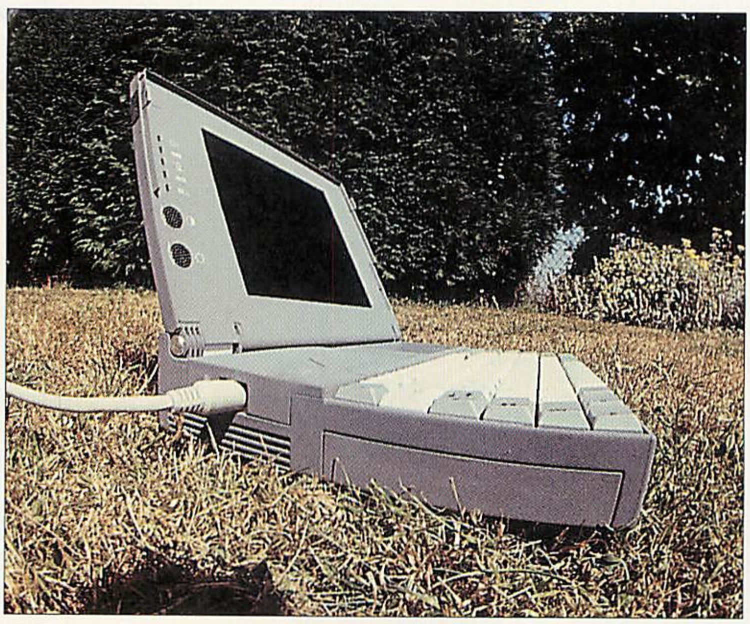
The answer to this question is easy – where is the market? The target audience for most notebook computers is business people on the move. I challenge you to name a large business that uses Acorns extensively.

Teachers are a key market for Acorn but most teachers already own a computer both at school and at home, so can't justify the cost of a new portable – especially when a 3.5in disc for transferring work can be brought for less than a pound.

Students are another common user of notebook computers and if they have used Acorns throughout their time at school, an Acorn portable should be the logical choice. However students are not rich (I should know) and therefore will go for the cheapest solution – usually a PC...

Acorn, therefore, has a problem in finding a market for a new notebook computer. Until one appears – or Acorn can produce an inexpensive and powerful notebook which will open up new markets – my personal feeling is that no matter how great a machine Acorn produces, it will only be a mediocre seller. This would result in a repeat of the situation we are in now. Without income from sales, little development money will be raised which in turn will mean the machine quickly becomes obsolete. An obsolete model will not sell and therefore Acorn will have great trouble justifying a new machine, resulting in a long delay between the release of notebook computers.

Don't get me wrong, I want Acorn to produce a new notebook but in this time of economic insecurity, a market is vital for any new product. Be patient; I'm sure Acorn will repay our faith in it in the near future with an excellent notebook computer – but do bear in mind the above caution while we all wait patiently...



Acorn's A4 – when is a replacement due, and will it sell? *(Photo: Dave Lawrence)*

Schedule update

AS PROMISED, printed below is one method of printing from *Schedule* without using a parallel link:

- Set up your Pocket Book to print to file and use a filename such as Print.wrd – this is done in the print setup screen. Print the diary from *Schedule* and then quit schedule. Press Tab over the newly created file and if it is under 40K you can load it straight into *Write*, edit it and then transfer it to your Acorn for printing.
- If it is over 40K then you need to use *PocketFS* to open the directory in which the file is stored, usually *M.WRD*. Now drag this file to an Acorn disc and set the file type to data. This file can now be dragged into any word processor. If you are using a member of the *Impression* family use the Return stripper option.
- This method seems to work well apart from a few hieroglyphics that seem to occur from time to time.

Bigger pockets

Acorn has announced the imminent arrival of a new Pocket Book 2 based upon Psion's 1Mb version of the series 3a. The 1Mb Pocket Book 2 will almost certainly be identical in appearance to the current models, but will of course have more memory.

The 1Mb Pocket Book 2 will be priced at £285 + VAT. The price of the 256K Pocket Book 2 has fallen accordingly to £205 + VAT, but the 512K model of the Pocket Book 2 has been discontinued now, in favour of the 1Mb model. Special education prices will apply.

Ever since Acorn released the Pocket Book it has been available at a special price in packs of ten. Acorn has now released two new bulk purchase packs: the school pack and the site pack. The school pack consists of 100 Pocket Book IIs and ten each of the following free: parallel link, Desktop link and mains adaptor. The site pack consists of 1000 Pocket Books, and 100 sets of accessories free. The price for the 256K Pocket Book II is £20000 for the school pack and £192,500 for the site pack, both plus VAT.

Acorn Computers Ltd
Tel: (01223) 254254

Do you need an assistant?

Portable Software specialises in producing business-oriented software for the Pocket Book and Psion 3. The Assistant Range consists of packages that can help with sales, ordering, banking, training and more. I plan to take a more detailed look at these next time but if you run a business they look well worth checking out.

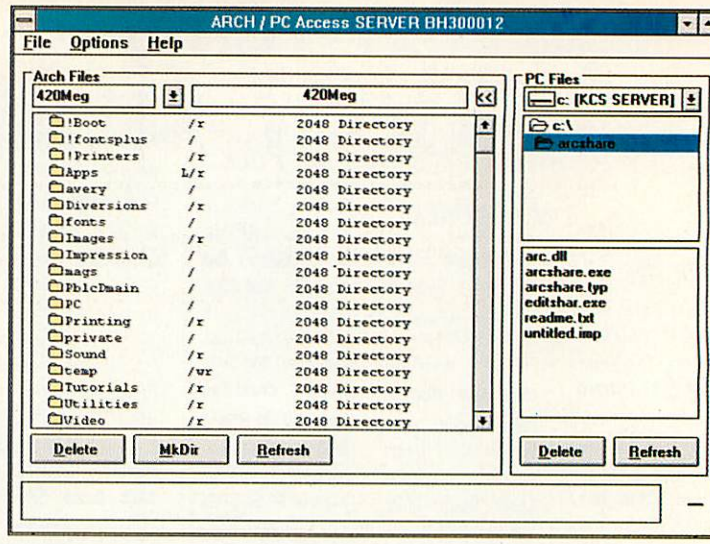
Portable Software
Tel: (01904) 633918

Contacting me

You can contact the Portables column by writing to me, Mark Taylor at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: markt@acornusr.demon.co.uk.

Arcshare™

Acorn to PC Networking Software



Its finally happened. A company has come up with a simple and inexpensive solution to an age old problem.

Getting access to files stored on a PC has always been a problem for Acorn computer owners. There has always been Floppy Disk transfers, but these are slow and limited to 1.44Mb. There has been several attempts to "Network" the two computers together but most attempts have been problematic and needed a great deal of extra hardware.

Arcshare is the latest program from KCS which allows any Acorn computer with an Access network card to talk to any PC with a network card & Windows.

Arcshare needs no extra hardware other than cheap network cards. Arcshare is very easy to use through its graphical interface and is, on average 40 times quicker than using a floppy disk, but with no file size limitation. Arcshare can even use CD Rom drives from a different machine.

Available Now.



In the Main screen on Arcshare Client, both the Acorn and the PC directories are visible. Files can either be copied, or deleted, even new directories can be created on the Acorn from the PC. Arcshare has the advantage, that it can be run directly from the Windows Filemanager so that file manipulation is simple. Arcshare can run under a Windows for Workgroups network in conjunction with other PC's on the same network. There is no limit as to the amount of Acorns that can be seen from the PC on the Access network.

On the Acorn, the PC directories are designed to look just like any other Acorn directory. In fact, Arcshare makes the PC behave as if it were part of an Access network. Files can be copied from the PC directories to acorn directories in the normal manner. Files can even be copied from one PC to another PC via the Acorn.

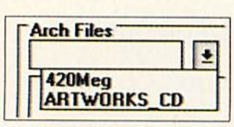
It's time to join the PC and the Acorn on the same network. Call KCS now to find out more about Arcshare and networking Acorns to PC's.

Arcshare Client v1.4

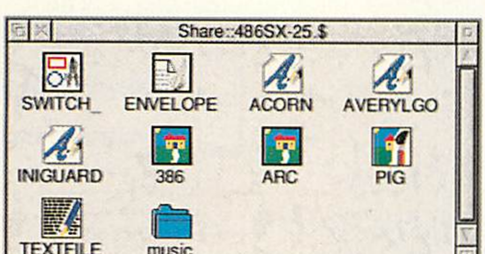
- Allows file transfers between Acorn and PC Computers.
- No Filesize Limitation.
- Automatic Filetyping when the Acorn receives a file so that the file is ready to be loaded into an application straight away.
- Automatic File Extensions added when a file is transferred from the Acorn to the PC so that the file can be loaded into a program straight away.
- Easy to Use Graphic Interface.
- No "Dedicated Server" Computer required.
- Connects directly to Acorn Access Network. Very easy to setup and install.
- Works with Windows 3.1, 3.11, Windows 95 & Windows NT

Arcshare Server v1.4

- Has ALL the Functions of Arcshare Client v1.4 but with the following additional extras.
- Allows transfers of files from the Acorn.
- When a Window is open displaying a PC directory, all the files are filetyped even though they are stored on the PC!
- Files can even be copied from PC to PC from the Acorn.
- Any Acorn on the Network can access the PC.
- Makes the PC system look like another Acorn Access system.
- Files can be loaded into applications directly from the PC.



CD Roms, Hard Drives & other Acorn Computers can be seen & used by the PC.

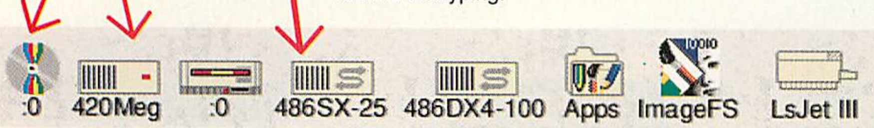


The PC Directory looks just like another Acorn Directory, thanks to Automatic, remote Filetyping.

See It! Use It! Buy It!

at the

Acorn World Show



Prices

Arcshare Client v1.4
£79.00 & Vat

Arcshare Server v1.4
£99.00 & Vat

Available from:

Kimberley Computer Services. 73 Chapel Street, Leigh, Lancashire, WN7 2DA. Tel - 01942 677777. Fax 01942 672300. email - Info@kcsprem.demon.co.uk

& other reputable Acorn Dealers

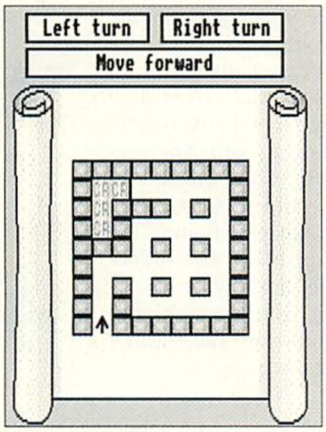
Cover disc

Crystal Rain Forest 2 demo

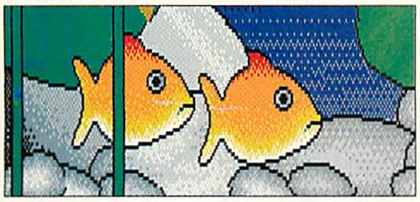
Author: Sherston Software

***'AZON** is in trouble again! Gomez, a wicked scientist has escaped from prison and is totally set on environmental destruction with the aid of his evil robots. Using the wonderful crystals found in the rainforest he is producing dangerous chemicals that are polluting the rivers and killing the wildlife.*

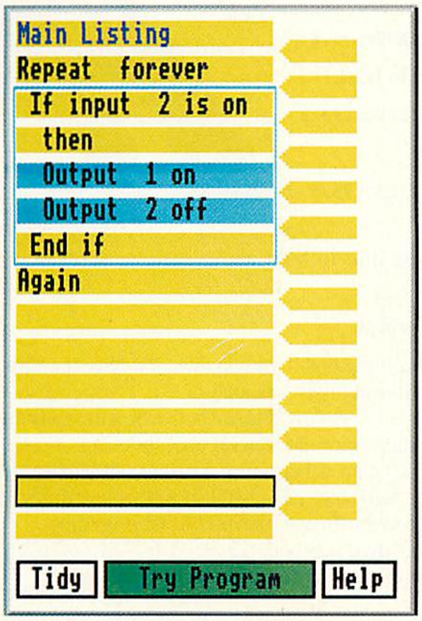
'All children who came to the rescue in Crystal Rain Forest will surely want to help again. Familiar characters from Crystal Rain Forest are around to offer help and advice in this exciting new adventure.



'Pupils face a series of problems and challenges that introduce and develop the idea of control technology in a carefully structured and logical manner as they battle their way through the rain forest in a valiant attempt to thwart Gomez's fiendish plans...'



Yes, Sherston Software has done it again. Never a company to make education dull and boring, Sherston has turned its attention to Control Technology – making machinery do what you want in the order you want it to happen – and simple programming. *Mission: Control – Crystal Rain Forest 2* has all the hallmarks of a classic: an involving and topical story, problem solving and good use of sound and graphics.



Crystal Rain Forest 2 will be launched at Acorn World, but *Acorn User* has brought you an exclusive preview of the game with the demo on this cover disc. This shows you a couple of problems out of the many encountered during the game, and sets the scene for the full version.



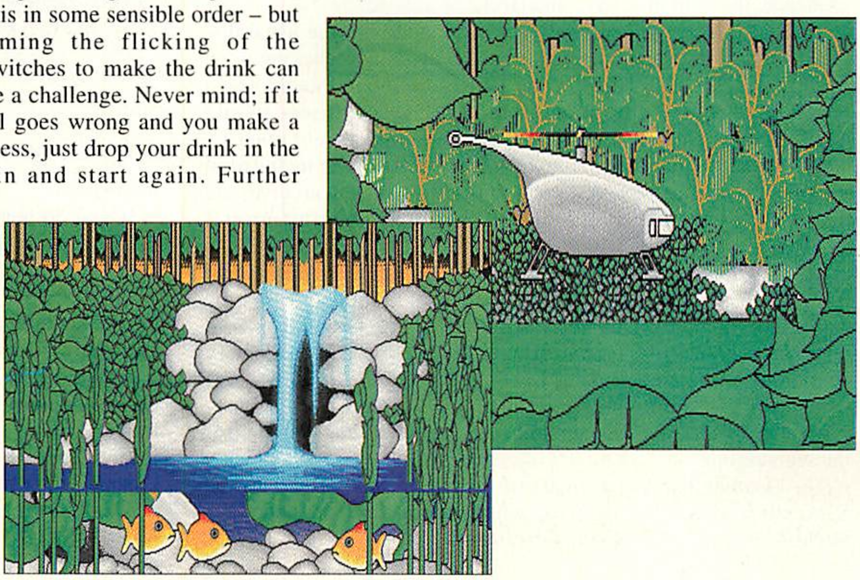
In order to run *Crystal Rain Forest 2* you will need to have the font *Tabloid* installed on your system. Either copy the font from within the *!Fonts* directory on the disc to your own font folder, or double-click on the *!Fonts* directory on the disc; the latter course is not recommended as it will un-install the other fonts on your system, but is fine if all you want to do is run the demo.

When you run *Crystal Rain Forest 2* it installs itself on the icon bar. Clicking on the icon takes you into the demonstration. The villainous Gomez is introduced, and very menacing he looks too behind a grid of prison bars. The first test encountered is to wire up and control a machine for making a suspicious green drink called 'Juicy'.

Connecting the wires to the switches is simple enough – though it's wise to do this in some sensible order – but timing the flicking of the switches to make the drink can be a challenge. Never mind; if it all goes wrong and you make a mess, just drop your drink in the bin and start again. Further elements of the game are then explained, until you reach the maze, where you have to link the 3D view you can see with the map. This isn't going to cause any experienced mazers any problems, but it's fun dodging the bats!

Mission: Control – Crystal Rain Forest 2 is aimed at teaching Control Technology to primary school children, and comes with a comprehensive teacher's guide and help and activities cards. It runs on both RISC OS 2 and RISC OS 3, and is available for £44.95 + VAT from Sherston Software.

Sherston Software
Tel: (01666) 840433
Fax: (01666) 840048
E-mail: sales@sherston.co.uk



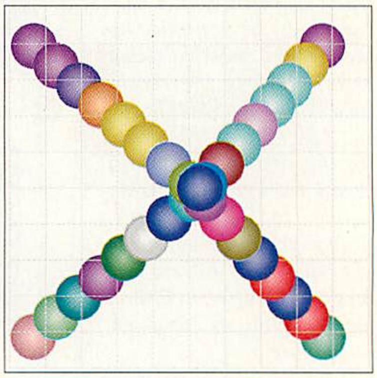
Regular items

Various authors

There are no demonstration programs with the C tutorial this month, although we will be starting our WIMP programming series next month and building up a library of WIMP routines. This month, however, the C tutorial is concerned with the issues surrounding WIMP programming in general, so specific program examples are not appropriate.

That old faithful *INFO supplies most of this section, containing everything from a french verb tester to some fast Assembler maths routines. Remember that game of tig we featured a few months back? Well, it's back, and this time you can play the computer. Jan Vibe makes a departure from his usual 'interesting' coloured creations and creates a stereogram forest instead.

There is also a program to process 24-bit files to any given 256-colour palette using the Floyd-Steinberg Integer method beloved of *ChangeFSI*. Unsurprisingly for *INFO, it uses its own data format for both the graphics and the palettes, though it outputs a normal sprite – it is left as a programming challenge for the reader to design a Desktop version which accepts sprites and JPEGs. Knowing our *INFO readers, one will appear in due course. Stereograms seem to be the order of the day, with Mike Cook also venturing onto the territory. Mike's program in the *RuntheRISC* directory generates a number of patterns which should be viewed using the large mirror contraption he describes in his article in the magazine; what do you mean, you haven't made yours yet? Shame on you!



Occasionally there are files on the cover disc which tie in with the Questions and Answers article in the magazine; this month, Questions and Answers returns the compliment and offers advice for anyone struggling with the archiving system on the *Acorn User* disc.

Update on CLICBack

CLICBack, the hard disc backup program that was on the September cover disc, has been very well received. The author, Steve Spry, reports that registrations for the program have been 'boosted to a previously unbelievable level.' All proceeds from the registration of *CLICBack* go to the charity The Cancer and Leukaemia in Childhood Trust, so this is very good news indeed for it.

However, Steve reports that there were a few bugs in version 2.75 which have now been ironed out, probably as the result of the extensive testing the program has now received. Among the changes to the latest version are:

- The 'Fatal internal error type 2' bug sometimes encountered after writing to the first disc has been fixed. This occurred if the data backed up to the first floppy was less than 1 per cent of the total.
- The 'Fatal internal error type 5' bug which sometimes occurred has also been fixed.
- A quick delete routing has been added for floppy discs.
- *Restore* now has a pause button.
- Some non-standard WIMP behaviour has been tidied up.

Registered *CLICBack* users will, of course, be entitled to an update if they send a blank formatted disc and an SAE to Steve Spry, 36 Moreton Avenue, Bideford, North Devon EX39 3AY. Non-registered users now have an added incentive to send Steve that £10 for all his hard work.

Disc information

THE appearance of the *Acorn User* cover disc will change depending upon whether or not you have RISC OS 2 or 3 installed on your machine. If you load or boot *ArcFS* in your boot sequence, this will also have an effect.

RISC OS 3 users will normally be presented with the usual display of icons; they can open the archives by double-clicking upon them (this is the equivalent of the 'View' option in the old *Menu* program). To get help on an archive, RISC OS 3 users should choose Help from the App. 'Appname' submenu obtained by clicking with Menu over the archive icon. If *ArcFS* is included in your boot sequence, you will need to run it before the archives are displayed as applications, though they will open as normal archives.

RISC OS 2 users will have to work slightly harder. They should first run *ArcFS*, which is the program which uncompresses the data in the archives. Double-clicking on an archive will open it, revealing a *!Help* file, a *!Run* file, a *!Sprites* file and a directory containing the archived data. Loading the *!Help* file into a text editor will give information on the archive contents. *ArcFS* may give an error the first time an archive is opened; this should clear the second time.

The October disc had a small error which meant it asked for the September disc to be inserted when it was first opened. It is possible to rectify this: change the lines:

```
Filer_CloseDir ADFS::AUSep95.$
```

and

```
Filer_OpenDir ADFS::AUSep95.$
```

in the file *!ArcFS.!Boot* to read:

```
Filer_CloseDir ADFS::AUOct95.$
```

and

```
Filer_OpenDir ADFS::AUOct95.$
```



respectively.

If you do not want the disc to boot automatically, you can set the system variable:

```
set Magazine$Disc -noboot
```

in your boot sequence. I assume that if you do this, you have the technical knowledge to open the archives 'manually'.

If your disc is faulty, then you should test whether it will verify by clicking with Menu on the floppy drive icon and choosing 'Verify' from the menu. You should then either return it to TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH (if it does not verify or is damaged) or to the editorial office at *Acorn User* (if it verifies).

The *Acorn User* cover disc has been checked for viruses using *Killer* version 2.101 from Pineapple Software.


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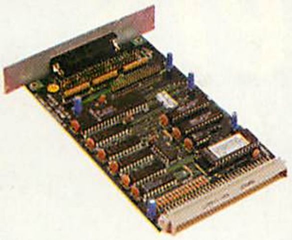
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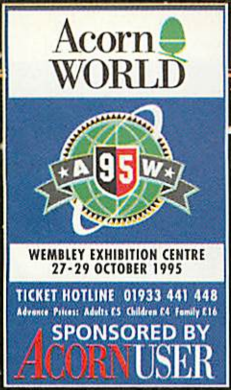
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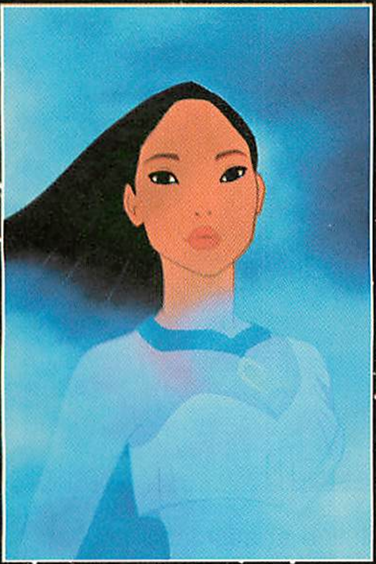
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Welcome to Acorn's World

In our 16-page show section, we preview the attractions at Acorn World '95, the Acorn event of the year.









Disney's Pocahontas © Disney

Doesn't time fly? It seems like much less than a year since we were all wandering round Wembley to the strains of the *Simon the Sorcerer* theme music, puzzling over the Morphy Richards toaster in Peter Bondar's 'rocket-ship' Risc PC, thrilling to the surround-sound home entertainment experience, experiencing the 'walk-through Mike Cook' and asking awkward questions about where the 486 co-processor was. But the year has passed quickly, and now the media buzzes with talk of the 'Information Superhighway' and, if you don't have an e-mail address, it seems you're not worth knowing.

Always a company to be one step ahead of the current trends in technology, Acorn has themed this year's show around this revolution in communications technology. However, the Information Superhighway means much more than just the Internet – which is crowded and anarchic but fun, more like a crowded dodgem ride than the fast lane of a motorway – it also embraces interactive television. This is an area where Acorn can claim to be leading the world; its Online Media division has created an affordable solution which leaves the other nascent systems standing. Acorn users from the days of the BBC Micro have always taken a keen interest in Acorn's technological innovation, and there's no better place to see it than at Acorn World.

A hands-on experience

It's Acorn's show, of course, but it would feel very empty without all the other exhibitors. For most visitors, the show offers a unique opportunity to try out all the latest hardware and software from the third-party developers. Because of the nature of the Acorn market, you will often be able to chat directly to the people who plan and write the software and build the hardware – you won't have to endure a pre-rehearsed marketing spiel from some suit who's never actually used the product and who talks in bullet points.

Over the next few pages of the magazine we will reveal everyone's plans for the show, and tell you which stands you must visit if you are interested in a particular subject. We also have a preliminary floor plan so you can map out your route through the crowds, and know where *Acorn User* is going to be so you can drop in and meet the team.

The free show theatre is always a big attraction at the show, with presentations given by experts in a wide number of fields. Many of these will be packed out, so plan the ones you want to see with our theatre timetable and arrive early.

Fun for all the family is promised by the troops of jugglers, magicians and face-painters who will be on hand to entertain younger visitors; they'll also be able to meet characters from Disney's new animated blockbuster *Pocahontas* and see a preview of the film now showing at cinemas all over the country.

If you haven't got your ticket yet, remember that they will be cheaper in advance, and also that our exclusive offer to join Clan Acorn and attend the show at a special price is still running.

The Acorn User stand

Our expert technical and editorial staff will always be on hand at the *Acorn User* stand to offer impartial advice and assistance. If you're not already a subscriber then this will be your big chance to join as we unveil our new package of free gifts and subscription offers. You'll also be able to subscribe to IDG's new title, *Parents & Computers*, the magazine no parent should be without.

Back issues of both *Acorn User* and *Acorn Computing* will be available, and if you missed the *Acorn User* CD-ROM, the good news is that we've had a few more copies run off and will be selling those from the stand. Visitors to the show will also be able to buy the December issue of *Acorn User* hot off the presses, over a week before it hits the shops.

Our Internet reader offer will be running at the show – and you'll be able to try before you buy at the Acorn Cyber Café. As with previous shows, we'll be running a Lucky Dip at the show, so you can win all manner of exciting prizes by plunging your hand into a barrel.

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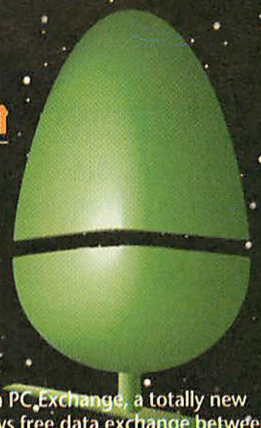
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Theatre timetable

(Show opens 10am–6pm Friday & Saturday. 10am–5pm on Sunday)

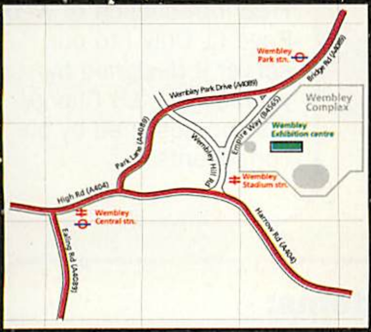


How to get there

London Underground: The exhibition is a five-minute walk from Wembley Park station on the Metropolitan line or a ten-minute walk from Wembley Central station on the Bakerloo line.

British Rail: The closest station is Wembley Stadium on the line out of London Marylebone towards High Wycombe. Wembley Central station (shared with the Underground) is further away, but is on the Euston to Watford Junction line, which may be more convenient for many travellers.

Once you are within the Wembley complex, the exhibition centre and the show should be signposted.



Acorn Stands

Acorn, as usual, will have a number of stands at the show. The main stand will be split between Acorn's two newly-formed divisions: Acorn Education and Applied Risc Technologies. The stand will centre on Technology City – a state-of-the-art display for everyone. The latest educational systems from Acorn will be on show, including its developing Education Online service utilising Online Media's set-top box technology. Online Media itself will be showcasing all the services you will one day be able to use from your home – as many already can in the Cambridge trial – with a massive video wall. Clan Acorn members will have a dedicated area with a seven-slice Risc PC, and upstairs you will encounter the Multimedia Experience, an explosion of sound and vision driven by Acorn technology.

Acorn will have a number of show offers on its products. You will be able to buy the A3010 Early Learning System – hardly a new product, but by no means obsolete – for a bargain price of £199 + VAT. The acclaimed Acorn Pocket Book II will be on sale for £205 + VAT including a free RAM disc, and Acorn will be selling Acorn PC Exchange, a totally new product which allows free data exchange between RISC OS and Windows for £25 + VAT.

Anyone interested in the Internet should take time out to savour the fare at the futuristic Cyber Café. Apart from all the usual Internet services, you will be able to access an on-line guide to the show, have a live Internet and video conferencing link with the Blue Peter stand at the BBC Big Bash in Birmingham, and participate in the world's first on-line treasure hunt. Correct entries in the treasure hunt will be entered into a daily prize draw.

Adjacent to the Cyber Café will be the Cyber Games Arcade, where you can test your computer games skills and try out some of the latest releases before you buy them.

The Pre-School Learning Alliance is staffing a stand to promote IT learning for the very young, where you can see a play school in action and try out Acorn's Early Years Learning System. There are free training sessions for parents and toddlers twice daily, and as last year, there is a free creche.

Special Education conference

As reported earlier, the first day of Acorn World (Friday 27 October) will include a conference on Special Education. This is open to anyone interested for a conference fee of £20, which includes entrance to Acorn World and covers all conference papers and reports, coffee, lunch and tea. For more information, contact the conference organiser on (01223) 254410.

The six papers being presented at the conference are:

- 'Clicker and Clicker Plus – easy switch or pointer access for students at all levels' by John Crick of Crick Computing.
- 'Is there one in your class? The dyslexic child: recognition and help' by Ann Cooke, the Director of the Dyslexia unit at the University of North Wales.
- 'Making the most of what you've got' by Dr Trevor Millum of the Resource Centre.
- 'Multimedia and Special Needs' by Trish Hornsey of SEMERC.
- 'IT solutions to monitoring the SEN register' by Judith Stansfield of the Cleveland Educational Computing Centre.
- 'From Access to Progression' by David Barnes, the head of Meldreth Manor school.

Friday 27th, Saturday 28th & Sunday 29th March, 1995

Time	*Friday*	*Saturday*	*Sunday*
11.00 – 11.25	**The Risc PC 700 and A7000** by Peter Bondar	**The Risc PC 700 and A7000** by Peter Bondar	**The Risc PC 700 and A7000** by Peter Bondar
11.35 – 12.00	**Give your child a head start** by Alan Bennett	**Give your child a head start** by Alan Bennett	**The IT agenda for dyslexia: Identification and training** by the British Dyslexia Association
12.10 – 12.35	**Developments in Interactive TV** by Online Media	**Clan members only**	**The Internet** by Chris Cox
12.45 – 1.10	**Clan members only**	**Power in their pockets – the bridge between school and home** by Dick Wallin	**Clan members only**
1.20 – 1.45	**New Media – an exploration** by *The Guardian*	**Multimedia – myth or magic** by Stewart Palmer	**Power in their pockets – the bridge between school and home** by Dick Wallin
1.55 – 2.20	**Acorn into the broadband age** by Mark Philips	**Special Education**	**Multimedia – myth or magic** by Stewart Palmer
2.30 – 2.55	**The Internat** by Chris Cox	**Acorn into the broadband age** by Mark Philips	**Give your child a head start** by Alan Bennett
3.05 – 3.30	**Multimedia – myth or magic** by Stewart Palmer	**The Internet** by Chris Cox	**Developments in Interactive TV** by Online Media
3.40 – 4.05	**StrongARM and the ARM 700** by ARM Ltd	**ATM and the interactive video revolution** by SJ Research	**Technical question time** by the Acorn panel
4.15 – 5.00	**Technical question time** by the Acorn panel	**Publishing on the Internet** by Mike Cook	Closed



Stand Guide

Karen Peach presents a subject-by-subject guide to who will be doing what at Acorn World

It's always a struggle when you actually get to Acorn World getting round everything you want to see. It's very easy to miss something important – but not with the *Acorn User's* handy guide to the show. Whatever your area of interest, we have the details on which stands you should visit.

You can play 'Stand Guide Patience' as well. Start by awarding each stand entry ten points, then subtract one point for each use of the words 'launch', 'feature', 'display', 'preview', 'demonstrate' or 'release' to describe what the company is doing with one of its products at the show. Deduct two points for the more pretentious words 'debut' or 'premiere' and five points for the phrase 'special show prices'. You can play this in the show guide proper, too; the stand with the highest score wins (well, it passed the time while we were typing them in).

Graphics

Alternative Publishing will be launching its eagerly awaited graphics utility, *ImageFS2*, which will allow users to import, export and preview the widest range of graphics formats. It will also have on display its specialist Acorn DTP, Bureau Output and Commercial Print Services.

Aspex Software will also be there, with a much faster 24-bit version of its 3D modelling software, available to buy 'real soon'. Aspex is renowned for its 3D design packages *ArchiTech* and *SPEX* and will be releasing details and a sneak preview of a brand new range of 3D design software.

Cambridgeshire Software House will be featuring its new *Viewmaster* digitising system featuring the Sharp Viewcam.

Clares Micro Supplies will have the very latest version of *Composition*, the highly acclaimed 24-bit image composition package, released earlier this year. This includes support for EPS files, the ability to load and save *PhotoShop* files, the option to retain *Draw*, text and *ArtWorks* files as vectors and also support for the AlphaLock video card. *Celebration* and *Card Shop* will be on show, and there will be special show prices for all Clares products.



Dec_Data will have the full range of Dec_Data and third-party clip art collections. *ClearView 2* will be on show along with a range of ready to run multimedia files for use across the curriculum. The popular *Draw* utility, *Draw_Changer* will also be demonstrated, showing its usefulness for quickly editing *Draw* files.

Iota Software will be demonstrating an exciting variety of films, animations and multimedia presentations all created using the versatile *Complete Animator* software package. Other Iota favourites will also be on show, including *DataPower*, *Outliner*, *Touchtype* and the new flatbed colour scanner.

Irlam Instruments will be showing the latest A4 flat-bed scanners from Epson including GT8500, GT9000 and transparency adaptor which will be demonstrated together with the completely revised *ProImage* scanning software. There are lots of special offers, and *Videodesk* will be launched – the first full-size full-motion video editing system for Acorn machines – and new software for the iTV card will also be on show.

Longman Logotron is launching *The Big Picture*, a brand new 32-bit Desktop graphics application. Featuring an extremely fast virtual memory system, it supports an unrivalled range of bit-image formats and a wide variety of input devices including Wacom graphics tablets. As usual, a 20 per cent show discount will be available.



CineWorks from Oregan gets a major update at the show.

Oregan Software will be highlighting *CineWorks*, the first package for Acorn machines allowing full screen PAL video editing from the Desktop. Don't miss the chance to be videoed and morphed into any number of famous people or gruesome monsters by *Dr Morph* – an essential stop for the younger visitors.

Pineapple will have Walter Briggs demonstrating a new version of *Studio 24* and will be launching a new *ArtWorks* tutorial video. There will also be demonstrations of colour scanners.

Spacetech will be showing a new professional version of *Photodesk* which has a vastly improved virtual memory, new filter, multi-channels, texture generation and lots of other exciting features, plus all its usual range of products.

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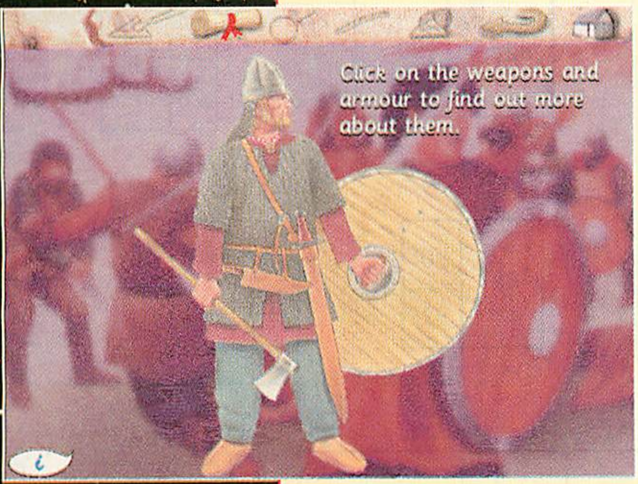
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4-Mation will focus this year on its recently-published *Guardians of the Greenwood. Guardians*, an eco-fantasy multimedia CD-ROM for ages 9 – 14, will be demonstrated throughout the show. Special show purchase offers will be run from the stand.

Anglia Multimedia will have 16 CD-ROM titles on sale at unbeatable prices, specialising in educational content for both home and school. Among the discs you can see for the first time at the Acorn exhibition will be *Vikings!*, *Nelson and the British Navy* and *British Isles from the Air*. Other titles and packages will be available.

10 out of 10's stand offers a great opportunity to buy early Christmas pressies at unbelievable prices. You can also see the new releases, *Geometry* and *Essential IT*.



Your first chance to see Anglia Multimedia's *Vikings!* will be at Acorn World.

AVP is one of the UK's leading educational software publisher/distributors. Complimentary software guides covering all subjects are available from the stand. Ten multimedia CD-ROMs from the AVP *PictureBase* series covering art, history and geography will be demonstrated.

Cambridgeshire Software House will be showing *Picture Puzzler* which allows any sprite file to be segmented and rebuilt, *What do you know?*, a general knowledge 'Quiz'-type application, and its full range of software.

Creative Curriculum Software will have a selection of new products, with many show-only offer prices. *Language Master*, a re-vamped *Report Writer*, *Easimenu* (which allows you to set up your own taylor-made menu), *Magic Maths*, *The Patience Addict* and the new *Mechanisms* CD-ROM will all be on sale.

Davyn Computer Services will be demonstrating and selling – at special show prices – Topologika's entire range of educational software, including new releases *Mathmania*, *Talking Clocks* and *Directions*, plus award-winning titles like *Music Box*, *Navigator* and the ever-popular *Freddy Teddy* series.

Eastmond Publishing Ltd is pioneering classroom solutions for teaching secondary mathematics using a classroom TV. A range of splitter cables is available to connect any Acorn computer and monitor to a TV.

ExpLAN will have a full-scale model of the Ark of the Covenant as the centrepiece, so there is no mistaking its stand this year. There is a chance to see the multimedia package *HolyBible* in its full glory, and watch as the cursor moves from left to right in the Hebrew version.

Kudlian Soft will be demonstrating *DataSuite 2*, *Splosh*, *Pictogram*, *Calender*, *RepTile* and the very popular *Banner II*. It has now released a new application called *ReTreeval*, which combines a database and a sophisticated decision tree program.

Lindis/Lingenuity has just signed a contract with Microtouch for distribution of the detachable Touchscreen for which Lindis has written the driver software. Both the detachable and the normal built-in touchscreen will be shown as well as *Cablenews 2*, *Presenter GTI*, *Cadmust Project*, *Buttons* and a range of Polaroid LCD Panels.

Minerva is launching its eagerly-awaited *Ancestry 2* package and *Prime Stories* and will be including a new feature called Digital Terrain Mapping in *Map Importer*.



The *Arcventure* series continues for one last instalment at Sherston's stand.

Resource will be offering a show discount on *MusicMaker*, the new play-and-learn music program for four to seven-year olds. Upgraded versions of *1st Paint* and *TalkWrite*, the talking word processor with improved speech, will also be on show.

Serious Statistical Software will have statistical analysis, data presentations and graphics packages covering requirements from GCSE to university-level research. The packages are fully multi-tasking, robust and very user-friendly.

Sherston Software will have a number of new releases for the show. On show for the first time will be *Mission: Control – Crystal Rain Forest 2*. The popular *Arcventure* format returns for one last adventure in *Arcventure VI – The Anglo Saxons*. Sherston will also be demonstrating its most recent launches, *The Talking Animated Alphabet*, *The Oxford Infant Atlas* and *Plantwise*.

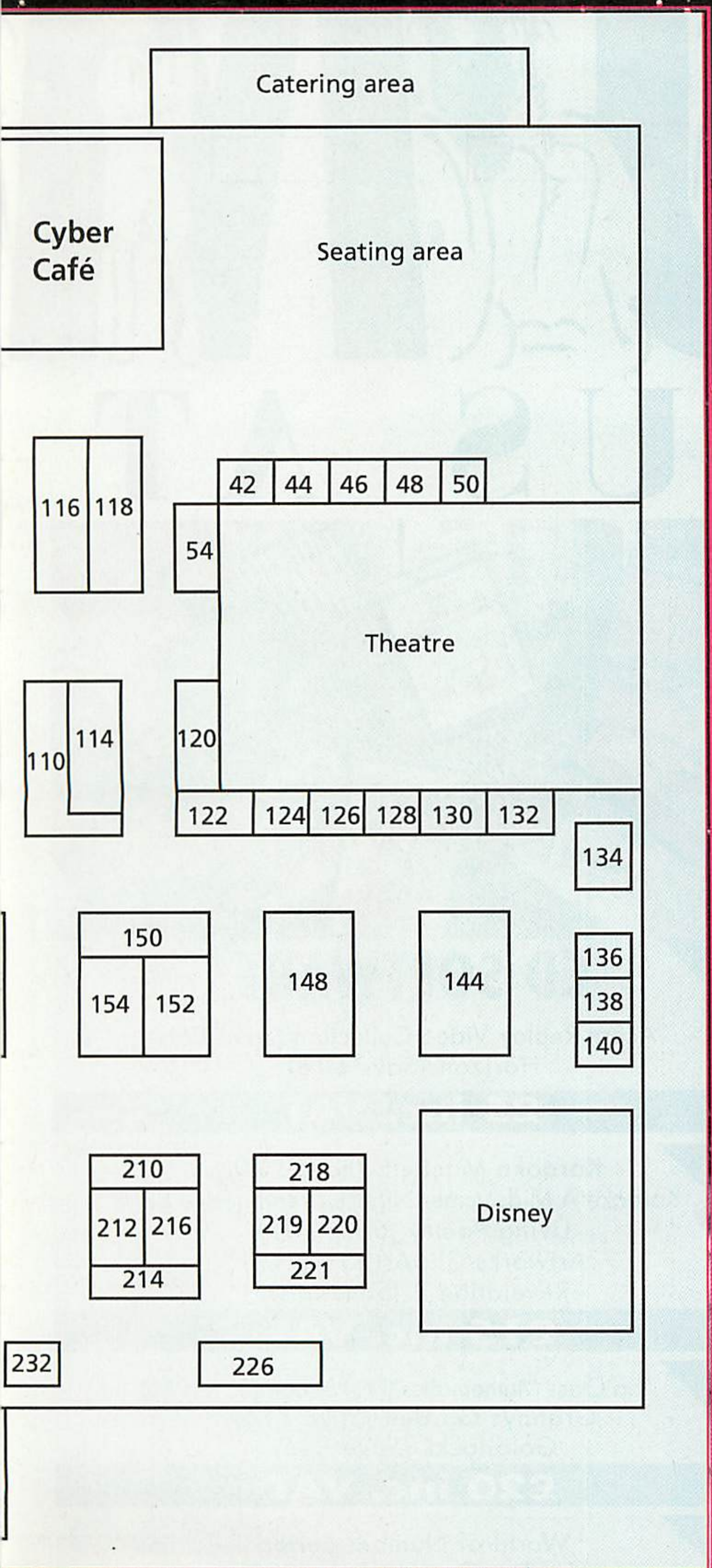
Making its debut on the **SEMERC** stand is *Pages*, an easy-to-use talking word processing/DTP package which allows the user to type, drag on pictures, doodle, change fonts, page format, size and colour. Also featured is *Dazzle*, a stunning new art package suitable for children aged up to 14 years.

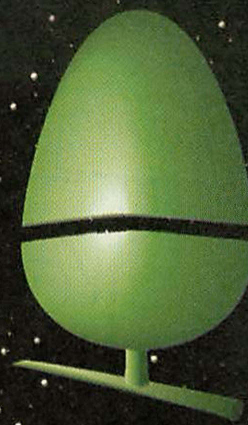
Wyddfa Software, specialists in talking software, will be exhibiting some exciting new Key Stage 1 software. *Talking Calculator* is a large add and subtract calculator which talks: the display, the buttons and the context-sensitive instructions all talk, and there is a graphical display of the sum. *Talking Stories*, a series of interactive story books with missing words to find, will be making their first Acorn World appearance starring Gwen, the mischievous bear.

YITM (Nelson Multimedia & Academy TV) will have *Breakaway Maths*, a fun-filled CD-ROM designed to encourage less able 7 to 12-year olds to progress in mathematics (Key Stages 2 and 3). The rest of the YITM range will also be on the stand.

Stand guide

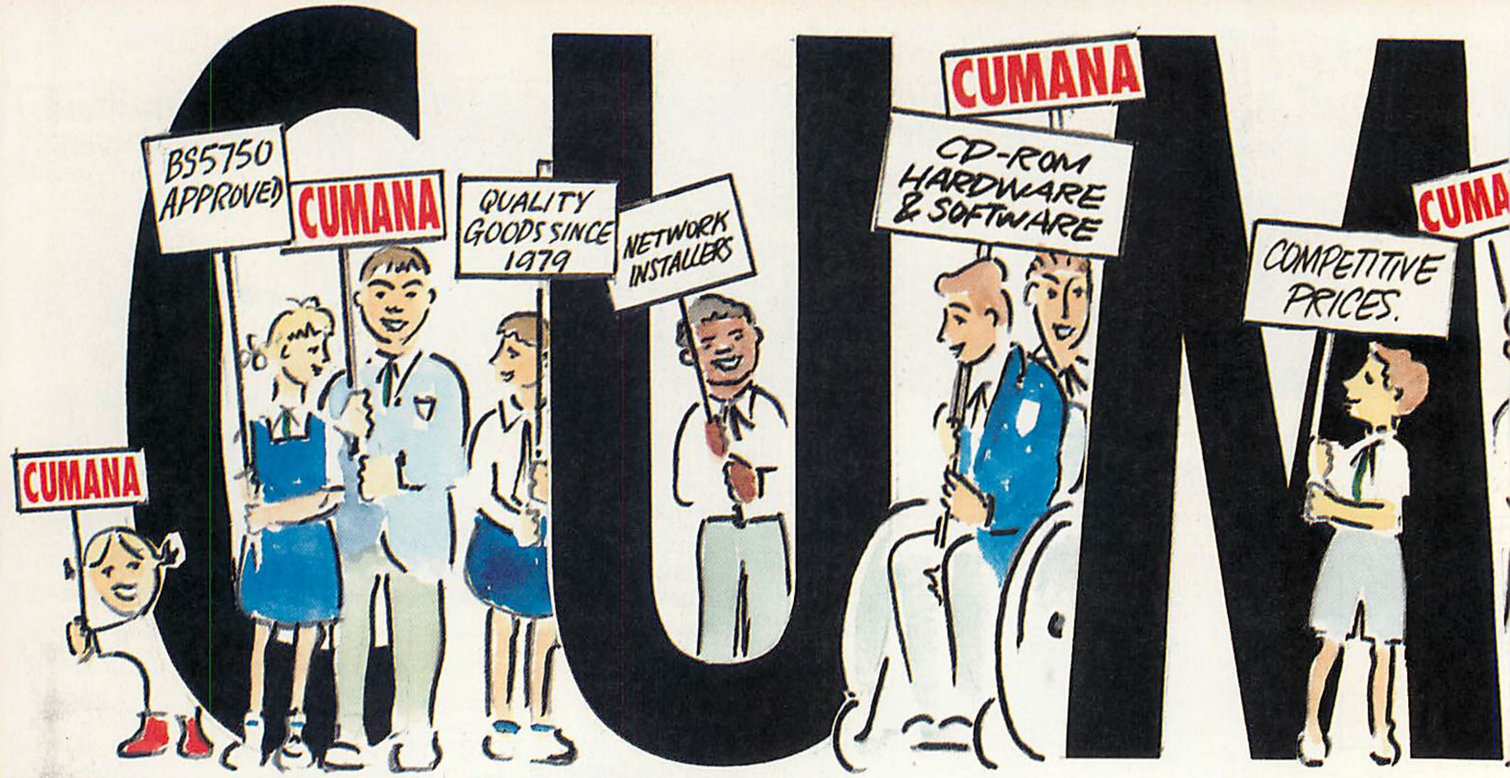

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194c
194d
196a
196b
196c
198a
198b
198c
198d
198e
200
200a
200b
201a
201b
202
204
Seating area
248
246
244
240
238
236
235
234
Catering area





List of exhibitors

Exhibitor	Stand
4Mation	152
4th Dimension	218
10 out of 10	226
Academy TV	144
Acorn Computers Ltd	84
Acorn User Magazine	82
Akalat Publishing	198a
AJS Computers	46
Aleph One	80
Alsystems/Ifel	158
Alternative Publishing	108
Ant Ltd	80
Anglia TV	202
Apricote Studios	79
Archimedes World	150
ArgoNet	76
Aspex Software	70
Atomwide	80
AVP	21
Beebug	184
Boothroyd Stuart Meridian	24
Cambridgeshire Software House	72
Castle Technology	15
Cirrus Software Ltd	196b
CJE Micro Supplies	92
Clares Micro Computers	102
Colton Software Abacus	186
Computer Concepts/Wild Vision	168-170
Creative Curriculum Software	114
Cumana	74
Dalriada Technology	234
Davyn Computers	19
Dec Data	201a
Desktop Projects Ltd	34
Doggy Soft	160
Eastmond Publishing	42
Eclipse	76
EESOX	41
Electronic Font Foundry	44
ExpLAN	232
Icon Technology	17
Integrex Systems Ltd	176
Iota Software Ltd	166
Irlam Instruments	210
KCS Premier	29
Krisalis	11
Kudlian Soft	235
Lingenuity	94
Lindis	94
Longman Logotron	178
Management Graphics	238
Minerva Software	100
National Westminster Bank	196c
Nelson Multimedia/YITM	144
Neurotron Software	90
Norwich Computer Services	116
Oregan Software	110
Pineapple Software	106
Quill Marketing	7
R-Comp	40
Resource	78
SEMERC	98
Serious Statistical Software	212
Sherston Software	88
Sibelius	122
Simtec Electronic	28
Snap Computers	96
Softease Ltd	198b
Spacetech	54
System Insight	9
TBA Software	118
The Computers in RE Project	198e
The Guardian Newspaper	162
Uniqueway Ltd	20
VTI	76
Warm Silence Software	216
Wyddfa Software	198e



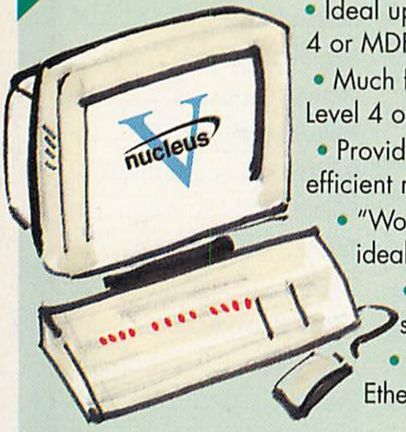
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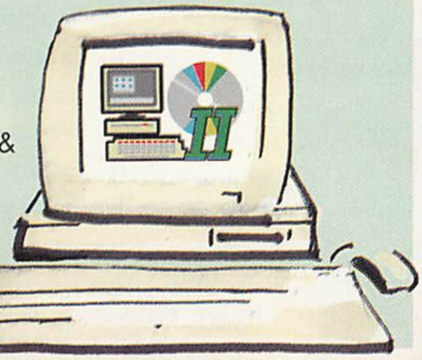
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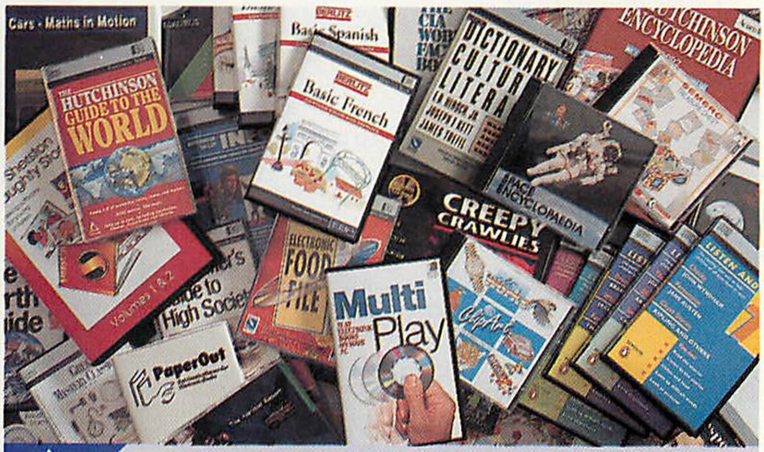
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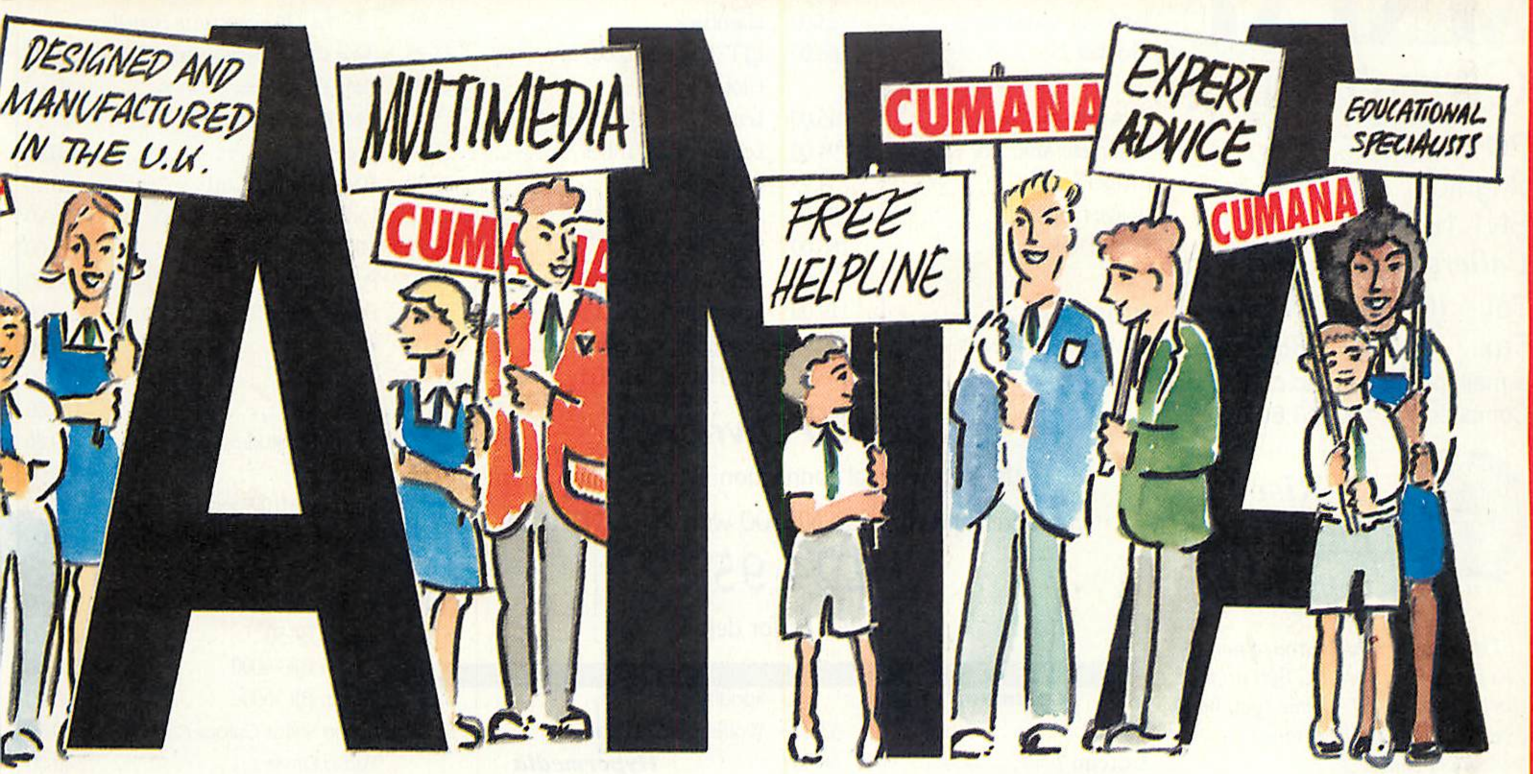
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ACORN WORLD

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See Acorn User Reader Offer on Page 82

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DTP

Akalat Publishing will have a special offer on new subscriptions to *Acorn Publisher*. The latest issue will feature Internet publishing as well as back issues at special show prices. There will also be a selection of books on DTP, design and layout for sale.

Beebug will be showing and taking orders for *Ovation Pro*, demonstrating both *Sleuth 2* optical character recognition system and *Easy C++*.

Colton Software will have the up-date to *Fireworkz Pro* plus the rest of its software range.

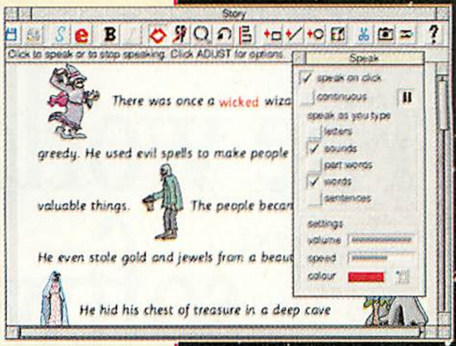
Computer Concepts will be showing its full range of hardware and software for publishing and multimedia, which includes an upgraded version of *Impression Publisher*, the new Canon ink-jet printers and *TurboDrivers* and the just-launched *ArtWorks II* (*Xara Studio*) will be running on a 486 card. There will be special show deals on all products, including those from Wild Vision, Wacom, Pioneer and Canon.

The Electronic Font Foundry specialises in designing high quality fonts for Acorn, IBM and Macintosh computers, and has about 1,000 fonts for all European Latin languages, and also for Greek, Cyrillic, Hebrew and Indic languages. All this and more will be available from the stand.

Icon Technology Ltd has added multi-directional text to the list of impressive features to be found in its range of word processors which already include multi-columns and multi language spell checking. Visit this stand to see for the first time how right to left text can be typed just as easily as left to right. The professional versions of *EasiWriter* and *TechWriter* will also be on show.

Management Graphics will be launching its clip art package *BitFolio* Edition 7.

Softease Ltd will be selling *Textease* version 2 and *Talking Textease* at Acorn World '95. Version 2 features rotated and editable text and pictures, drag and drop text editing, OLE and JPEG support.



Textease and *Talking Textease* on the Softease stand will be two of the home DTP highlights of the show.

Games/Leisure

4th Dimension Don't miss the opportunity to see two new packages which will be on special offer at the show. *Stereoworld* – converted from the IBM version specially for the Risc PC – will be available. *Spobbleoid Fantasy* will be launched; the two will be incorporated into one bundle at a special show price.



How will you fare on the Burn 'Out challenge on Oregan's stand?

For the games player, **Dec_Data** will be selling the Magnetic Media, analogue joystick interface.

Krisalis will be launching *Alone in the Dark* as well as selling all the usual games at bargain prices.

Oregan Software will be throwing down the *Burn'Out* Challenge, where two real arcade driving machines installed with A5000s will be serial linked together allowing visitors to experience The Race on the Edge. There will be prizes for the best buggy driver of the day.

New releases from **TBA Software** include *The Cobalt Seed* and *Command Ship*. The new titles plus all of the existing range will be on show, along with demos of what's to come in the future. A new range of Joypads starting at an amazing price of *£9.99* will be available, along with a new feature-packed range of high quality multimedia speakers. Look out for demonstrations of the latest TBA Advanced Graphics (TAG) engine, which includes support for 32-bit screen modes and a superb new video compression system.

Eclipse is launching a new world simulation game called *Global Effect*, with a focus on the environment. The CD-ROM version of *Dune II* will also be available for the first time.

Dealers/General Consumables

AJS Computers will be offering an upgrade and part-exchange service involving memory, hard-drives and computers. There will also be second hand equipment for sale.

Beebug will be selling a huge range of ultra-competitively priced products. In particular it will be piling high its A3010 computers still at only £135 + VAT and giving exciting offers on Risc PCs. By popular demand, fully warranted reconditioned systems will be on sale. Hardware will include hard drives, RAM/SIMMs, scanners and networking products.

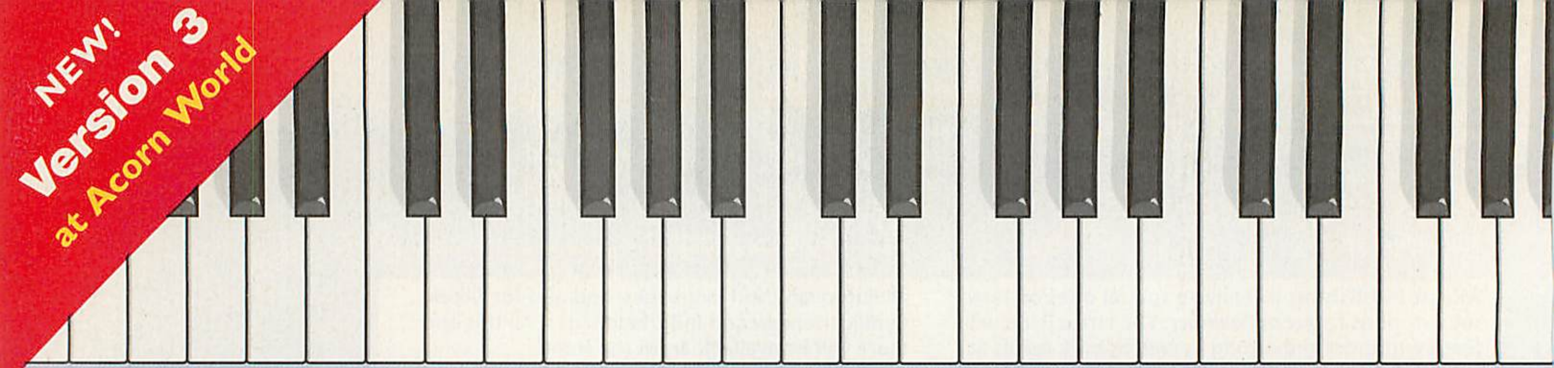
CJE Micro Computers will have special deals on Risc PCs, memory, as well as CD-ROM drives for under £100.

In addition to its successful range of *TopicArt* disc-based clip art, and its *Quick* series utility software, **Desktop Projects** will also be supplying the new Risc PC/A7000 range of computers, Risc PC memory, low-cost SCSI & ATAPI CD-ROM drives and IDE/SCSI hard drives at very attractive prices.

Norwich Computer Services is having a charity bring-and-buy stall; if you visited the Harrogate show you'll know what to expect. Bring along any old BBC tapes, Acorn software, old computers etc, that you no longer require for the massive charity sale. You will also get the chance to buy the *Archive* CD-ROM at a reduced price when subscribing to Archive magazine.

Snap Computers will have its full range of consumables and accessories at Acorn World, with all products at special show price.

System Insight sells a whole range of consumables for ink-jet printers including the Inkmun brand, cartridges and paper. There will be special show prices on refill kits.



NEW! **Version 3** at Acorn World
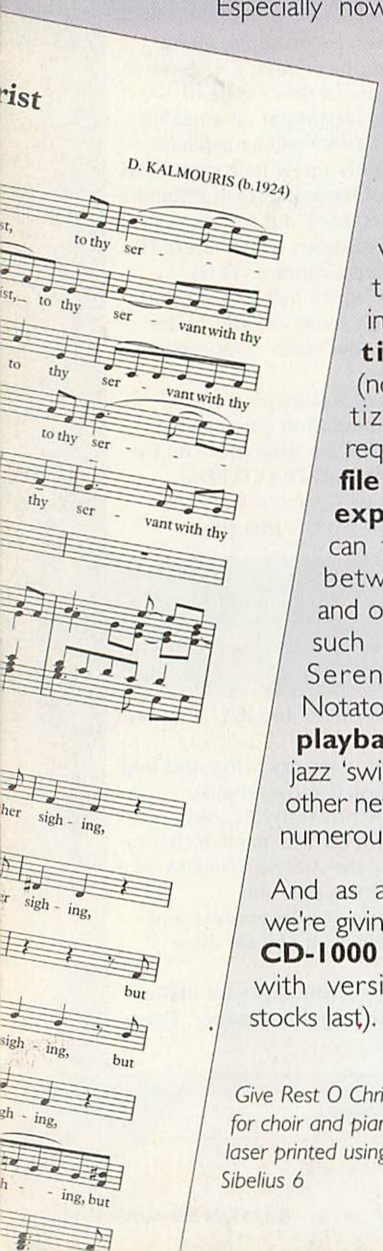
The world's best music software just got better.

WHAT BETTER Christmas present for yourself than one of the award-winning music programs ***Sibelius 6***, ***Sibelius 7 Student*** or ***Sibelius 7***?

Especially now that they're coming out in **Version 3** – being launched at the Acorn World show.

Version 3 features super-intelligent **real-time input** (no crude quantization is required), **MIDI file import and export** so you can transfer music between *Sibelius* and other programs such as Rhapsody, Serenade and Notator, **enhanced playback** (such as jazz 'swing') and many other new features too numerous to mention.

And as a special offer we're giving away **FREE CD-1000 headphones** with version 3 (while stocks last).



Give Rest O Christ for choir and piano, laser printed using Sibelius 6

If you don't know about the *Sibelius* programs already, over the last two years they've received major reviews in *The Times*, *Independent*, *Sunday Times*, *New Scientist*, *Daily Telegraph*, *Financial Times* and even the *South China Morning Post*... been seen by *100 million* TV viewers worldwide... played the piano in a major London concert... received numerous awards... and become the UK industry standard for music publishing.

Sibelius 6 (now £179+VAT) does everything most people need – all standard notation, up to 16 instruments and 512 bars. *Sibelius 7 Student* (now £495+VAT) has more advanced features for more complex music such as orchestral scores.

Sibelius 7, the full professional program (now £888+VAT), is the UK music publishing standard – used by the **BBC**, the **Royal Academy of Music** (it's a compulsory part of the curriculum), the **Royal College of Music**, major publishers including **Faber Music** and **Music Sales** (Europe's biggest music publisher), and top composers such as **John Rutter** and **Paul Patterson**.

"Dramatically reduces the time it takes to compose a piece of music"
– Financial Times

"Sibelius feels as if it has musical instincts"
– The Independent

"Far more powerful and sophisticated than any other score-writer"
– Personal Computer World

"Could become an international standard"
– Sunday Times

"I never thought I would abandon pen & ink, but Sibelius's quality, speed & ease of use have completely won me over"
– John Rutter (composer & conductor)

"Sibelius is so sophisticated that it could make a piano perform dazzling feats far beyond the reach of any human hands"
– The Times

"In a totally different league from anything else"
– Paul Patterson (Professor of Composition), Royal Academy of Music

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☐ an info pack about the Sibelius programs

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Fax: 01223 351947
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Hardware

AlSystems's SCSI 2 card is the main attraction, along with the Power-tec range: hard discs, CD-ROM drives, Acorn computers, memory, a range of IDE interfaces and many other hardware items.

ANT Limited launches its *Ant Internet Suite* at the show. The suite provides an easy-to-use integrated set of programs including a full-featured WWW browser, e-mail program, and file transfer and search utilities. *OmniClient* will also be on show.

Aleph One Ltd will be showing the latest additions to its range of powerful PC cards for the Risc PC and other Acorn computers. Second processor cards for Risc PCs and expansion cards for other models are available along with software add-ons for networking.

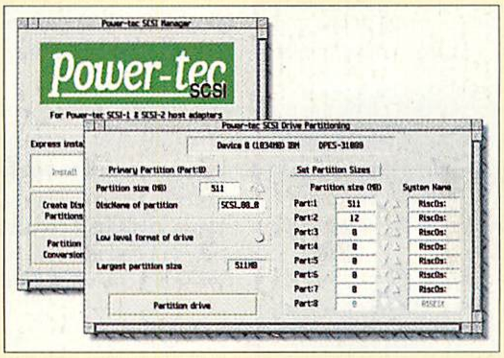
Atomwide's long-awaited ISAdaptor will be launched at the show, bringing many new expansion possibilities for Acorn A300, A400, A5000, A7000 and Risc PC series computers. When used with a PC card, the ISAdaptor makes it possible to access the features of most IBM PC/AT ISA expansion cards form DOS and Windows. Even without a PC card, some ISA cards can be controlled directly from RISC OS to provide extra facilities in the Acorn environment. There will also be a new version of the Serial Port's high speed serial card.

Castle Technology will be showing its colour scanners and SCSI interfaces along with its new Ethernet interface combined with SCSI. There will also be a range of hard drives, CD-ROM drives and ergo keyboards and numerous show offers with large discounts.

Cumana will have its proTeus multifunction drive, with *CDNet 2* and the Nucleus file server being the main features among a range of general multimedia and networking equipment.

Eesox will be showing its range of CD-ROM drives and graphics tablets. Of particular interest will be the parallel port CD-ROM drive and the A5 graphics tablet.

Integrex Systems Ltd will launch its new 'twin headed' colour printer, the Colourjet Master II with true black ink. *Banner* Software will continue to be bundled with the Colourjet Classic.

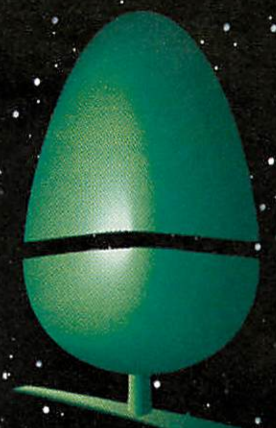


Iota Software, **Irlam Instruments** and **Pineapple** have a wide range of hardware – see the graphics section for more details.

Quill Marketing will be exhibiting a new jet-fill snap-in cartridge as well as the new photo-fun printer which allows true photographs to be printed direct from your printer.

Simtec Electronics, specialist in memory and process system upgrades, will have its range on display. Of particular interest this year is the multi-processor board for the Risc PC.

Uniqueway is launching the **Risc Disc Volume 2.** It also intends to be showing *Empire* with the new Irlam MPEG card plus other hardware items.



The AlSystems SCSI 2 card is bound to attract interest this year.



Cumana's proTeus drive will be on sale – don't miss *Acorn User's* special offer, which applies at the show.

Miscellaneous

Apricote will be showing off its popular accounts package *Prophet* and the *Personal Accounts* application as well as a new version of *Shares*.

Archimedes World will be on sale at the show with its first cover CD-ROM, and visitors will also be able to subscribe at the stand (special show prices are rumoured to apply).

Argonet is launching *Voyager*, the first really easy-to-use Internet access software. It offers a full range of Internet services for the home user and education, including modems, connection and support etc.

Beebug's famous *PC Survival Guide* will be available, and with any luck its new *Windows 95* and *Internet Survival Guides* too. The *Risc User* team will also be on hand to take subscriptions.

Cirrus Software will be showing its new technologies for producing component software and compound documents – well worth a detour to its stand.

Davyn Computer Services will be showing the *RiscCAD* Professional CAD package. New features added since the last show include *Draw* file import, network and queued plotting, polygon construction, and extended trim tools. The product will be available at special show prices, so it's worth a good look.

***The Guardian* Newspapers Limited** welcomes visitors and other exhibitors to view a number of products in its portfolio that have a natural synergy with the theme of the Acorn World Show and the education market in general, namely: *The Guardian Education, The Observer Schools Report* and *OnLine, The Guardian's* weekly IT section.

Longman Logotron is launching *Music Studio 32*, the definitive RISC OS music program which is highly configurable and intuitive.

The **National Westminster Bank** exhibit will include a demonstration of the NatWest Interactive TV Banking application *A World's First*, where users will be able to navigate around the system using a remote control handset. There will be information about the NatWest Face to Face community programme promoting the understanding of finance in schools and colleges and a Student advisor will be present; representatives will also be available to handle enquiries relating to Personal Finances.

Making its first public appearance is *MIDIWorks* from **Oregan Software**. Take the opportunity to preview the forthcoming midi sequencer which offers professional editing facilities and playback resolution for midi musicians wanting to create music on the RISC OS.

The show will see the first public presentation and retail of the new *HTMLEdit* and *Shortcuts* packages from **R-Comp**. *HTMLEdit* is the first commercial, Internet Web Authoring System for Acorn machines. Also available on this stand will be the Tabby Graphics Tablet and products by **Rheingold Enterprises**.

Sibelius Software author of the award-winning music programs *Sibelius 6, 7 & 7Student*, is to release major new versions at the Acorn World Show. Version 3 will include a revolutionary 'thinking' real-time MIDI input system, and MIDI import and export.

TAG Developments is selling its multimedia authoring package *HyperStudio*.

Warm Silence Software will be showing off its existing applications, and launching a new one at the show. On sale will be *Larger* and *MovieFS*. A *QuickTime VR* viewer is being launched; this innovative piece of software allows users to explore virtual worlds based on photography.



The Acorn User Awards 1995

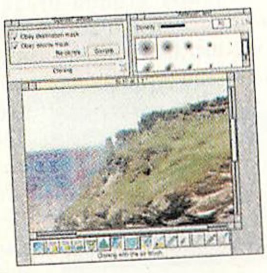
Best graphics software

Winner: ***Photodesk*, Spacetech, (01305) 822753**

Runners up: ***Studio 24*, Pineapple Software, 0181-599 1476**

***ImageFS 2*, Alternative Publishing, 0141-248 2322**

Last year we mentioned that we might well see Spacetech's *Photodesk* walk off with the prize of Best Graphics software, and we were right. The combination of painting tools and sophisticated image processing tools has given *Photodesk* the equivalent position in the Acorn market as *Photoshop* has in the Apple market. We use it on a regular basis at *Acorn User*, a good example being the new way we present our screenshots, with a patterned drop shadow to liven up rectangular screenshots.



It's a good job, however, that we have restricted these awards to products that are available right now, as the next incarnation of Pineapple's *Studio 24* is looking very exciting: the current release is easily worthy of a runner up prize.

The second runner-up is an essential utility for anyone converting between different file formats – *ImageFS*, which makes TIFF, BMP, Targa, JPEG and many other files as easy to open as sprites – version 2 improves on an already excellent product.

Best DTP software

Winner: ***Impression Publisher Plus*, Computer Concepts, (01442) 351000**

Runners up: ***Textease*, Softease, (01332) 204911**

***EasyFont 3*, Fabis Computing, (01283) 552761**

It's been a quiet year in the DTP market. It would have been great to report that Beebug's *Ovation Pro* had swept the board, but it's not quite finished yet (though it should be pretty close by the time you read this). So it's Computer Concepts' excellent *Impression Publisher Plus* that wins the top prize, as there still isn't any package to touch it. No prizes, though, for CC's development of the package, which has effectively ground to a halt.



Our first runner-up is *Textease* from Softease, a budget-priced desktop publishing package with excellent word processing facilities and an optional spelling checker. The second runner up, Fabis Computing's *EasyFont 3*, pips its competitor *FontDir* to the post for sheer ease of use, combined with fast and compact font management.

Best business software

Winner: ***Prophet 2*, Apricote Studios, (01354) 680432**

Runners up: ***DataPower*, Iota Software, (01223) 566789**

***TableCalc*, iSV Products, (01344) 55769**

If there's one thing guaranteed to impress punters, it's a program that takes a subject as mind-bogglingly confusing as double-entry bookkeeping and makes it as easy to use as a calculator. Apricote's *Prophet 2* is such a piece of software, and deserves to win the award for Best Business Software. Apricote Studios has a talent for providing well-presented and simple software that has considerable technical sophistication lurking behind the user interface: the PC accounting world could learn a thing or two from *Personal Accounts* and *Prophet*.
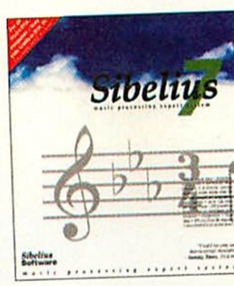


Easily the most friendly database we've ever used, Iota's *DataPower* has been a firm favourite since its launch in late 1992. Our second runner up is *TableCalc* from newcomer iSV, a no-nonsense spreadsheet that does all the basic functions, and acts as a table creator too.

Best music software

Winner: ***Sibelius 7*, Sibelius Software, (01223) 302765**

Runner up: ***Serenade*, *Rhythm Bed*, *Rhapsody 3* et al, Clares, (01606) 48511**

In the DTP category there's *Impression*, and in the music category there's *Sibelius 7*. If there's one program that Acorn users can cite as the flagship product for RISC OS when battling the Apple and PC markets, it's *Sibelius*. Musicians are buying Acorn systems purely to use the package, and despite the fact that it's been around for over a year and a half, nothing has appeared on any platform to rival it.



We've only awarded one runner up prize in this category, as it isn't one product, but a whole range. Top-class packages like *Serenade* (the best sequencer), *Rhythm Bed* (drum sequencer from hell) and *Rhapsody 3* (the score editor that is eclipsed by *Sibelius*, but is still a very capable package) make Clares' range of products a worthy runner-up.

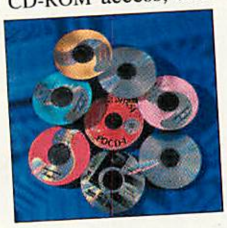


Best network software

Winner: ***CD Net 2*, Cumana, (01483) 503121**

Runner up: Teletext client/server, XOB, (01307) 840364

Cumana's ingenious *CD Net 2* solves the problem of networks and CD-ROMs by speeding up CD-ROM access, and enabling the network supervisor to prevent certain types of file – like Replay files, for example – from being exported over the network.



Another network activity that clogs up networks is teletext access, so network managers will appreciate our runner up, XOB's teletext system.

Best CD-ROM

Joint winners: ***Guardians of the Greenwood*, 4Mation, (01271) 25353**
***The World of Robert Burns*, CSH, (01480) 467945**

Runner up: ***Kingfisher Micropedia*, ESP, (01945) 63441**

The CD-ROM has come a long way in the last year, with CD-ROM drives becoming one of the most popular add-ons for Acorn users. Last year's winners in this category look considerably outdated, and there's such a choice that we haven't been able to split our two joint winners.

Guardians of the Greenwood is a truly ground-breaking product. Combining digitised pictures and computer-generated graphics, this CD-ROM creates an eco-adventure with atmosphere and high educational content. We eagerly await more from the keyboard of 4Mation's Mike Matson.



Equally ground-breaking is *The World of Robert Burns*. Packed with information on the Scottish bard, this CD-ROM isn't just a mass of facts and writings, but is a complete multimedia experience. The ability for teachers and parents to create 'trails' to dictate how the information is accessed gives the CD-ROM depth and a long life, and means you can use the CD-ROM to explore much more than Robert Burns himself, but also Scotland and the times he lived in.



Our runner up is an excellent example of the staple of multimedia CD-ROMs: an encyclopaedia. Aimed at primary and middle schools, the *Kingfisher Micropedia* has few rivals to its clear text, powerful search engine and prolific pictures.

Best educational software

Winner: ***The Oxford Reading Tree*, Sherston Software, (01666) 840433**

Runner up: ***Clicker Plus*, Crick Computing, (01604) 713686**

What do you get if you take one of the most successful educational software companies in the country, and add the established academic excellence of Oxford University Press? Easy: an award winner. Sherston has taken the OUP books and added its excellent Talking Book system to produce a unique and beautifully presented set of packages. And we can expect even more innovation from Sherston as it gears up to launching its series of Listening Books, which recognise speech as well as produce it.

Our runner up, *Clicker Plus*, is a very simple program that has limitless applications. From the original *Clicker* and *Switch Clicker*, Crick Computing has developed a sort of multimedia authoring tool with a difference: you design grids of buttons, each of which can be linked to other grids, and can contain graphics, sound, speech and so on.



Best game

Winner: ***Starfighter 3000*, Fednet, (01332) 842666**

Runners up: ***Dune II*, Eclipse, (01243) 531194**
***Simon the Sorcerer*, Gamesware, (01703) 456523**

Fednet's stunning *StarFighter 3000* is an Acorn original, and anyone who has seen it will testify to the quality and speed of the graphics, as well as the ferocity of the gameplay. Your humble editor has to confess to being totally helpless at flying the fighter – then again, I couldn't get the hang of *Zarch* either, so there's no hope – but perseverance pays off. An original, and the best, now being ported to the 3DO with even better graphics.



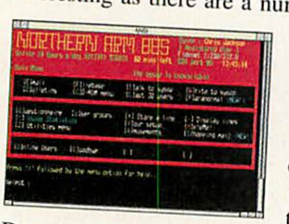
Dune II is a thinking man's game, with you taking control of a vast playing area, and trying to build structures to mine space to build more structures to create troops and weapons to destroy the enemy; yes, it's just as confusing as the book, but just as rewarding. The disc version of *Simon the Sorcerer* is a top-rate graphical adventure, with atmospheric music and sound effects, a great sense of humour, and cutesy graphics, though for once the disc version is better than the CD-ROM.

Best communications software

Winner: ***ArmBBS*, Keith Hall, Shareware**

Runners up: ***ArcWeb*, Stewart Brodie, Freeware**
***FreeNet*, Tom Hughes, Freeware**

Comms is all about giving power to the people, and it's highly encouraging to see that all the winners in this category are freely available as Public Domain or Shareware. It's also interesting as there are a number of commercial comms products promised which have failed to materialise with all features working in time for these awards.



But even when the commercial packages arrive, they've got stiff competition. *ArcWeb* and *Freenet* are also stunning examples of how to produce top quality Public Domain software. To go surfing the World Wide Web, all you need to do is download these two packages, change a couple of lines which contain your Internet connection details, and go.

Best Public Domain software

Winner: *ArcWeb*, Stewart Brodie, Freeware

Runners up: ANSI editing suite (*TrueANSI*, *TAMovie*), Gareth Boden, Shareware

Picking the single best PD program is *very* tricky indeed. There usually isn't one single big program that's incredibly good. However, in terms of major developments there seems to have been a lot of work in the comms area, so we decided on one of the runners-up for best Comms software; *ArcWeb* by Stewart Brodie as the best PD program.



The runner-up is Gareth Boden's ANSI editing suite including *TrueANSI* and *TAMovie*, allowing many bulletin boards to have highly attractive graphics which can easily be created on your Arc.

Best hardware

Winner: Upgradable memory modules, Simtec, (01772) 812863

Runners up: Fargo Primera printer, Spacetech, (01305) 822753
proTeus, Cumana, (01483) 503121

A very general category, but one easily one by a simple idea. Risc PC owners are lucky in that they can add SIMMs to their machines to provide a theoretical maximum of 256Mb of DRAM, but at the end of the day there are still only two slots available – and the A7000 is even worse with only one slot. However, Simtec, master of hardware innovation, came up with the idea of having upgradable upgrades: SIMMs with sockets, so you can buy a SIMM and plug in extra memory chips later. Truly inspired, and unique in the Acorn market.



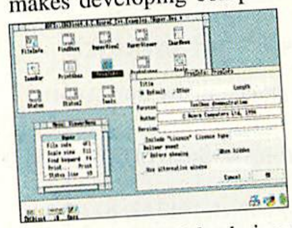
The first runner up is the Fargo Primera printer, marketed by Spacetech. Yes, the printer is cool, with its ability to print using both wax thermal techniques and dye sublimation, but the clever bit is in the Spacetech-developed printer driver for use with the ubiquitous *Photodesk*. Our other runner up is the proTeus drive from Cumana. This standard-sized 5.25in drive houses both a quad-speed CD-ROM drive and a 650Mb optical disc.

Best programming tool

Winner: *Toolbox*, Acorn, (01223) 254254

Runners up: *Easy C++*, Beebug, (01727) 840303
***Zap*, Dominic Symes, Freeware**

Okay, so it's a probably a bit unfair giving the award to Acorn, seeing they wrote the operating system, but the *Toolbox* portion of the C++ development system is a dream. It makes developing complete applications that bit easier, incorporating template designing, automatic menu generation, window handling and so on. The good news is that RISC OS 3.6 includes the *Toolbox* modules as standard, so applications that use the *Toolbox* will run in very small memory allocations indeed.



Beebug's *Easy C++* deserves a runner up award for being the first friendly and easy-to-use C++ compiler for the Acorn. Winner of two awards last year, *Zap* remains the essential (and free) tool for every programmer; it is quite excellent, and a testament to the ethos of the Public Domain.

Best expansion card

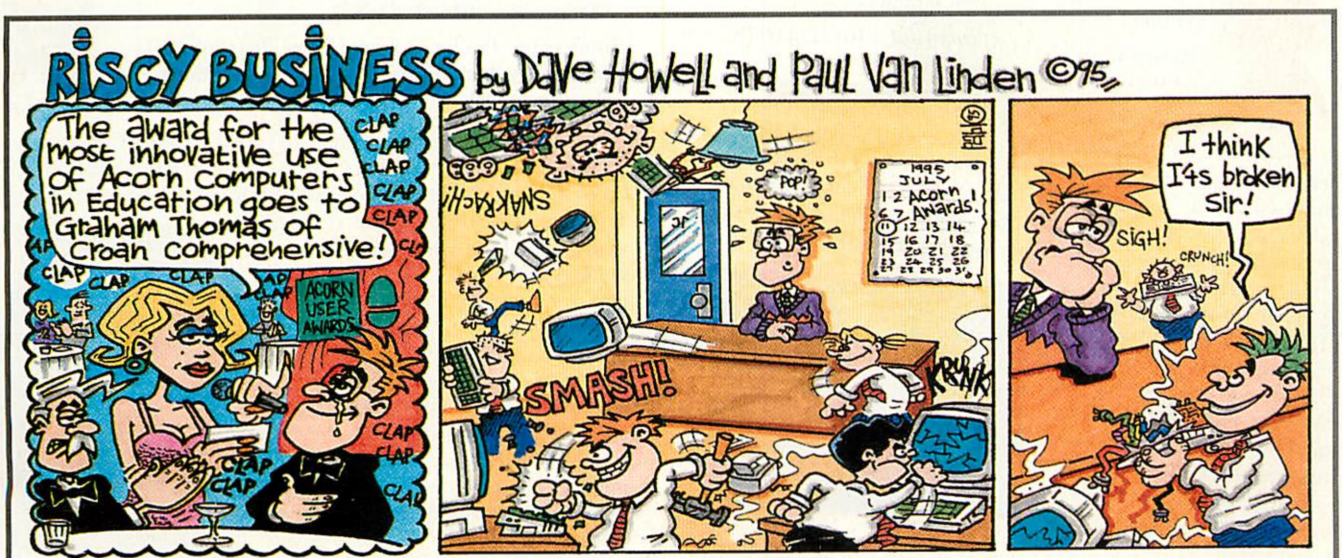
Winner: Movie Magic, Computer Concepts, (01442) 351000

Runners up: SCSI 2, AlSystems, (01420) 561111
SCSI 2, Cumana, (01483) 503121

If only for the fact that the Acorn platform beat Apple to quality desktop MPEG (at the last count, Apple users had one, poor quality MPEG card, with Apple's own still to materialise), the Movie Magic card is innovative and unique, an attribute that always used to apply to Computer Concepts' products. Movie Magic enables you to play video CDs on your desktop, with CD-quality sound and perfect pictures.



SCSI 2's been around on PCs and Macs for a while, but it's only recently that Cumana and AlSystems have brought out their solutions. There's little to differentiate the two, so both deserve a runner up award for innovation and being the first past the SCSI 2 post.



Reader Awards



Reader Award: Best product

Winner: Risc PC 486 co-processor, Acorn, (01223) 254254

Runners up: *PublishArt*, Smart DTP, (01332) 842803
***Starfighter 3000*, FedNet, (01332) 842666**

I suppose it's an obvious choice, but Acorn's PC co-processor for the Risc PC gets the readers' award for Best Product. Innovative, cheap, reliable and late, the 486 card caught the imagination when the Risc PC was released in April 1994, but wasn't available until much later than planned. However, the 486 card *is* here, it has proved very popular, and faster processor versions are available, with more promised soon. Credit must be given to Aleph One, who designed the card and managed to overcome the considerable technical challenges involved in producing the card, and kept the price down to specification.



Our first runner up is an interesting choice: it's clip art. However, Smart DTP's *PublishArt* is a different kettle of fish to normal clip art collections: it's more of a resource for desktop publishing. The pack contains 500 designs in *Draw* or *ArtWorks* format, split up into seven categories. Generally clip art is of varying quality and dubious value: *PublishArt* manages to strike a happy medium between value and quality.

The other runner up is no surprise: *Starfighter 3000* is also the winner of our Best Game category. Innovative and native to the Acorn platform, it's one of those programs you run to show your friends what 32-bit Acorns are capable of, *and* it's a great game.

Reader Award: Best article

Winner: TAOS beckons, March 1995

Runners up: Run the RISC
Coverage of the *Acorn User* CD-ROM

Acorn User readers have always liked to read about the future, along with a healthy amount of speculation, so it's no surprise that Chris Mellor's investigation of the possible developments at Acorn went down a storm. It predicted the development of the A7000, but what of the other predictions, like an ARM7500-based colour portable, and a Mega Risc PC at the end of 1996? We'll have to wait and see....



Mike Cook was popular in *Acorn Computing*, and he's also popular in *Acorn User*. The only column of its kind in the Acorn press, Mike brings his hardware knowledge to bear on projects so wacky, they're instantly interesting. Our article on the CD-ROM was also popular, which just goes to show that CD-ROM really is a viable medium for the Acorn market. It only remains for us to do another one, now.

Reader Award: Best dealer

Winner: Beebug, (01727) 840303

Runners up: Desktop Projects, 0161-474 0778
Castle Technology, (01728) 621222

Choosing the best dealer isn't easy: each dealer has its own strengths and weaknesses. However, Beebug has been serving the Acorn community for longer than I care to remember, with its competitive prices, imaginative software and hardware bundles and excellent technical support. Congratulations on winning Best Dealer, and let's hope this boosts sales of Acorn machines even more.



Runners-up Desktop Projects and Castle Technology have been doing sterling service over the last few years: it's great that two relatively new dealers should be recognised as quality providers of products and support. It's not just a case of shifting boxes, you know.

Reader Award: Best advert

Winner: 'Completing the jigsaw' from Atomwide, (01689) 838852

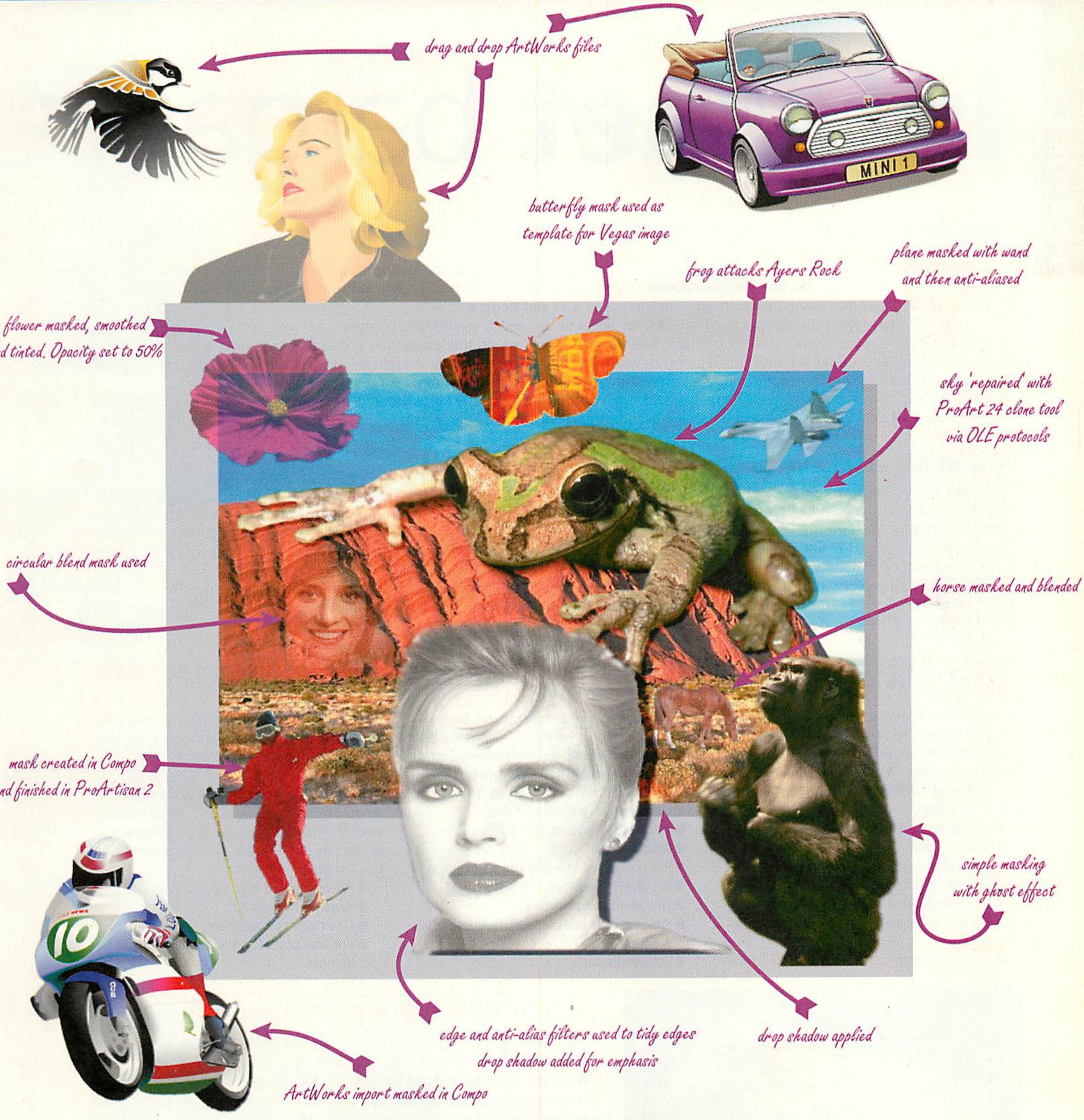
Runners up: *ProArt 24* from Clares, (01606) 48511
'Easy peasy, lemon squeezey' from Longman Logotron, (01223) 425558

Atomwide's advert, which appeared on the back of the magazine in the June and July 1995 issues, caught your attention: it's colourful, and different enough to grab the attention. It's especially successful, because it doesn't matter how hard you look at them, network podules just look like ... well ... podules; hardly the most thrilling sight in the world. Atomwide's design incorporates its products, but hidden beneath a clever jigsaw design.



Clares' advert with its four apples, each affected by a different *ProArtisan* filter, is clean and precise, getting the message across succinctly. Longman Logotron's is equally clean: it obviously works, as it is only a half-page advert.

Composition



£169.95 inc VAT (P&P free)

Special offer price of £85 for ProArtisan 24 owners

Introductory offer - £99.95 for users of other art packages

Access VISA

CLARES
MICRO SUPPLIES

98 MIDDLEWICH ROAD, RUDHEATH, NORTHWICH, CHESHIRE CW9 7DA
TEL: 01606 48511 FAX: 01606 48512 email: sales@clares.demon.co.uk

RISC PC EXCLUSIVE

Internet bargain

The Acorn User Internet Offer

Want to surf the Internet, but don't want to get involved in jargon or complicated configuring? Dying to look at the *Acorn User* web pages, but haven't got an Internet connection? Then you want our Internet pack, exclusively produced for *Acorn User* by ArgoNet, the new Internet company from the same stable as VTi and Eclipse.

Each pack contains everything you need to set your account up, and it couldn't be simpler. All you need to do is plug in the modem supplied, run the *Voyager* software pack, and that's it: there are no hidden extras. The software is programmed with your own personal password and account details, and is automatically set up to work straight away, without the need for any further action. And if there are any problems, there's a free number you can call for technical support as part of the package.

If you already own a modem, then there's a pack for you that includes the software and the connection for just £59 inc VAT. The software will enable you to post and receive e-mail, transfer files, surf the World Wide Web and more, all from a very easy-to-use interface.

How much you have to pay

The packs shown below all include your connection to the Internet. As with other services, this has to be paid for on a monthly or annual basis, but with each pack you get free registration (normally £25) and one month's free subscription to ArgoNet. After this month, the cost of subscribing to the Internet is just £12.50 + VAT per month: there's nothing else to pay except your phone bill. You can pay this monthly subscription using your credit card, or you can save £15 by paying for a whole year by credit card or cheque, at a cost of £135 + VAT.

And because ArgoNet can offer local call access to 90 per cent of the population, you can stay online every day for two hours for less that the price of a pint of beer. There are no other hidden costs, so there's never been a better time to join the Information Superhighway.

Offer 1: 28.8k solution £249 inc VAT

If you want the fastest access to the Internet possible, then you need our 28.8k solution. The modem included in this pack runs at a blistering 28,800 bits per second, the fastest speed commonly used on the Internet today. The pack, which has a RRP of over £350, contains:

- A US Robotics Sportster 28.8k modem
- Modem cable
- Pre-configured *Voyager* Internet suite
- ArgoNet registration
- One month's free access
- Pre- and post-sales support via a free 0500 number
- Courier dispatch

Offer 2: 14.4k solution £189 inc VAT

If your budget is a little more modest, then our 14.4k solution is just for you. The modem runs at 14,400 bits per second, the most common speed for Internet users, and easily fast enough even for intense World Wide Web access. The pack, which has an RRP of £300, contains:

- A US Robotics Sportster 14.4k modem
- Modem cable
- Pre-configured *Voyager* Internet suite
- ArgoNet registration
- One month's free access
- Pre- and post-sales support via a free 0500 number
- Courier dispatch

Offer 3: Software solution £59 inc VAT

If you already own a modem, then all you need to take advantage of our low-cost Internet service is the software – a full internet suite offering WWW browsing, e-mail, news file transfer – and the subscription to the ArgoNet service. This pack will work with all US Robotics modems and Hayes-compatible modems: if in doubt, ring our free 0500 pre-sales support number. The pack contains:

- Pre-configured *Voyager* Internet suite
- ArgoNet registration
- One month's free access
- Pre- and post-sales support via a free 0500 number



Note for those with pre-A5000 machines

If you own an A300, A400, A3000 or A540 machine, then you have a slower serial port than in later machines, so you may experience problems running your modem above 9600 bits per second. As a result, if you have an older machine, you may not be able to get the best out of the modems on offer. With any pre-Risc PC machine the 28.8k modem will not run at its fastest speed.

However, if you purchase a fast serial port card – which we can supply for just £79 inc VAT – then you can run your modem faster with no problems. And, of course, a faster modem will save you money on your phone bill...

To order your fast serial port card, just tick the box on the order form.

For more information, call free on 0500 585 586

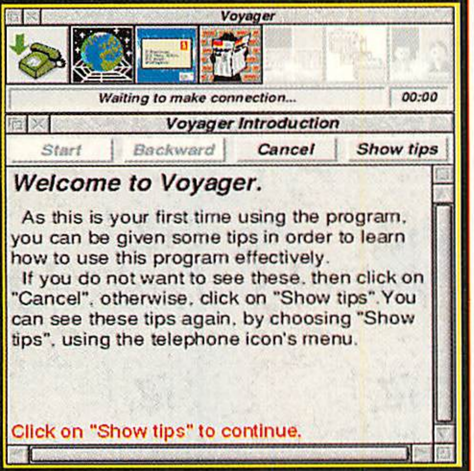
Reader offer

Argo NET

The Voyager Internet suite

The *Voyager* software provided with your ArgoNet connection is tailored to be incredibly easy to use. When you receive the pack, it will be pre-configured to include all the details of your account such as your password, as well as the best and cheapest number for you to call to access the Internet. It couldn't be easier, and no-one else provides such a simple service for Internet connection.

The *Voyager* suite seamlessly combines electronic mail, news reading, web browsing, file transfer and more, and integrates these functions so clicking on a web address in a newsgroup will automatically access that web site, without any more effort on your part. It really is that easy to use.



Other important aspects of the pack include: graphical ftp file transfer using icons and automatic log-on; full news and mail reader with editing, quoting, an address book and so on; web browser with support for virtually all Netscape extensions, hot lists, caching, sound, graphics, text and more; automatic log-on scripts for telnet; and security features to prevent access to certain areas of the net, so you can stop your kids surfing areas they shouldn't.

The *Voyager* pack is the most cost-effective Internet pack available, allowing simple access to all Internet facilities.

The ArgoNet service

When you subscribe to ArgoNet, you get a unique e-mail address – like mmoxon@argo.co.uk – and access to full e-mail, news, web and file transfer facilities, all at a local call rate for 90 per cent of the population. All network links are provided by the well-known company Unipalm Pipex, guaranteeing quality network connections to the Internet in Europe and the United States, and ensuring that there aren't too many users for the modems available, so you don't have to wait ages for a free line (and that's guaranteed).

The ArgoNet service is complete: it gives you access to the full Internet, all without extra charges as there are with Compuserve. Argo Online runs its modem lines at 28.8k, which is twice as fast as the 14.4k often found when using Demon, and the technical support provided by ArgoNet is not only excellent, it's totally free. Best of all, as ArgoNet is a sister company to VTi, technical support for Acorn users will be the best in the country, so even if you have problems, there will be someone to help.

ArgoNet will also have its own World Wide Web site, with all the latest news from ArgoNet, VTi and Eclipse, as well as other areas of interest for Acorn users, both home and educational. Its ftp (file transfer) site will contain lots of Acorn-related files, and the news server will give access to well over 10,000 different newsgroups worldwide, including all the Acorn groups like comp.sys.acorn.misc.

The ArgoNet service: it's the best Internet service Acorn users can buy.

Please fill in all sections.

Section 1: Personal details

Name: ____________________

Address: ____________________

____

____

Post code: ____________________

Daytime tel no: ____________________

Section 2: Machine details

Machine: ____________________

Memory: ____________________

Modem (if applicable): ____________________

Section 3: Order details

Please send me __ 28.8k packs @ £249 each

Please send me __ 14.4k packs @ £189 each

Please send me __ Software packs @ £59 each

Please send me __ Fast serial cards @ £79 each

Total cost: ____________

☐ I enclose a cheque/postal order, made payable to 'AU Internet offer', for the above amount.

☐ Please charge my credit card, details of which are in Section 5.

Section 4: e-mail address

We need to allocate you an e-mail name, but to make sure yours is unique, we need three different names from which we will pick one. Please give three names, in order of preference, so for the name 'Mark Moxon' you could choose 'mark.moxon', 'markm' or 'moxy', for example.

Name 1: ____________________

Name 2: ____________________

Name 3: ____________________

Section 5: Subscription payment details

☐ **Option 1:** I would like to pay monthly by credit card (£12.50 + VAT per month)

☐ **Option 2:** I would like to pay annually in advance and save £15 (£158.63 inc VAT).

☐ I enclose a cheque for my pack plus my annual subscription.

☐ Here are my credit card details (Access, Visa or Amex) – please charge me as appropriate.

Card number: Expiry date: __ /__

____

☐ I agree to allow my credit card to be debited monthly in advance after my first month's free access at a rate of £12.50 + VAT per month. I understand that I can give one month's notice to cancel my subscription at any time. ArgoNet will notify me at least one month in advance of any price changes.

☐ I have paid £135 + VAT (£158.63 inc) for a year's access in advance.

I understand that ArgoNet will provide an ongoing Internet connection with private e-mail address and free updates to the *Voyager* access package as they become available, and that ArgoNet will endeavour to the best of its ability to ensure that all services are available 24 hours a day, 365 days a year and will, wherever possible, notify users in advance of changes to service.

Signed: ____________________

Date: __ /__

E&OE. Please send this order form and payment to: Acorn User Internet Offer, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP. Please allow 28 days for delivery and account set-up.

☐ Tick here if you do not want te receive promotional material from other companies.

KIMBERLEY COMPUTER SERVICES

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CLAN MEMBERS

We currently offer substantial discounts to all Clan members. It is not possible to list all the special prices here, ask for our "Clan price list" available on disk.

Offer of the Month

170Mb 2.5" IDE Hard Drive
Suitable for A3010/3020/A4
£100 & Vat (inc Cable) Limited Stock
£169 & Vat with A3010 Interface

DISKETTES & DISK BOXES



		Ex Vat		Inc Vat
100 Capacity Lockable with Catch & Dividers **** BEST BUY ****		£2.98	b	£3.50
50 Capacity Lockable & Dividers		£2.55	b	£3.00
20 Capacity Flip Top Smoke Colour		£1.70	b	£2.00
15 Capacity Novelty Step Cube		£2.55	b	£3.00
12 Capacity Flip Top Clear		£0.85	b	£1.00
10 Capacity "Trendy" Flip Top (Black or Mint)		£1.70	b	£2.00
1 Capacity Flip Top Clear		£0.50	b	£0.59
DSDD 3.5" Diskettes	1-50	£0.30	b	£0.35
DSDD 3.5" Diskettes	51-100	£0.28	c	£0.33
DSDD 3.5" Diskettes	101+	£0.27	d	£0.32
DSHD 3.5" Diskettes 1.44Mb	1-50	£0.42	b	£0.49
DSHD 3.5" Diskettes 1.44Mb	51-100	£0.40	c	£0.47
DSHD 3.5" Diskettes 1.44Mb	101-200	£0.38	d	£0.45
DSHD 3.5" Diskettes 1.44Mb	201+	£0.36	d	£0.43

Available as FORMATTED PC DOS 1.44Mb if Required, at no extra cost! Please State.

SPEAKERS

	Ex Vat		Inc Vat
ZY-FI Amplified 8 Watts RMS, Ideal for Acorn or PC	£30.00	d	£35.25
SOUNDWave 10, 80W Sheilded Amplified Speakers for Acorn or PC	£59.00	d	£69.32
MICROPHONE, with 3.5mm Jack Plug	£4.25	b	£4.99
Clip On Microphone with 3.5mm Jack Plug	£5.90	a	£6.93

FLATBED SCANNERS



	Ex Vat		Inc Vat
2400 dpi Flatbed Colour A4	£425.00	e	£499.38
1200 dpi Flatbed Colour A4	£349.00	e	£410.07
Transparency Adaptor	£210.00	e	£246.75
SCSI Interface (State Machine)	£99.00	d	£116.33

Full COLOUR Flatbed Scanners at Low Cost.

Upto 2400 Dots Per Inch Scaning capability (PC) and 600 Dpi using Acorn Software. Both Acorn and PC Scanning software supplied. Sample scans available - Send SAE & Disk.

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	Ex Vat		Inc Vat
Citizen ABC 24 Pin Colour	£135.00	d	£158.63
HP Deskjet Portable	£120.00	d	£141.00
HP Deskjet 320/ASF/Colour Kit	£225.00	e	£264.38
HP Deskjet 540C	£ 215.00	e	£252.63
HP Deskjet 660C	£325.00	e	£381.88
Canon BJC600	£345.00	e	£405.38
Canon BJC4000	£235.00	e	£276.13
Canon BJ200ex	£195.00	e	£229.13
Canon BJ230ex	£ POA	e	£ POA
Canon BJ10sx	£159.00	d	£186.83
Epson Stylus 800+	£189.00	e	£222.08
Epson Stylus Colour	£365.00	e	£428.88
HP Laserjet 4L	£385.00	e	£452.38
All printers supplied with leads			
Turbo Drivers HP	£38.00	b	£44.65
Turbo Drivers Canon	£38.00	b	£44.65
Turbo Drivers Epson	£38.00	b	£44.65
Acorn 1.28c Printer Drivers	F.O.C.	a	F.O.C. *With Printer*

DATA SWITCH BOXES



	Ex Vat		Inc Vat
2 Printers - 1 Computer Centronics to Centronics	£11.75	b	£13.81
2 Computers - 1 Printer Centronics to Centronics	£11.75	b	£13.81
4 Printers - 1 Computer Centronics to Centronics	£15.95	b	£18.74
4 Computers - 1 Printer Centronics to Centronics	£15.95	b	£18.74
4 Computers - 1 Monitor VGA (15 Pin HD (F)) & KB (5 Pin Din)	£18.00	b	£21.15
2 Computers - 1 Monitor EGA (9 Pin D (F)) & KB (5 Pin)	£17.00	b	£19.97
2 - 1 Way Serial 25 Pin D Type Female to 25 Pin D Type Female	£10.75	b	£12.63
4 - 1 Way Serial 25 Pin D Type Female to 25 Pin D Type Female	£14.95	b	£17.57
2 Scart - 1 Scart TV Standard Euroscart to Euroscart	£11.75	b	£13.81

INKJET REFILLS

Inkjet Refills are an economical method of re-charging your existing print cartridge.

Premier Inks produce a complete range of tried & tested refills that are suitable for almost every inkjet printer on the market. The **Jet Black** refill is much darker than most original cartridges and often dries faster with less overspray, so the output looks clearer than before.

The Refills are packed in convenient ready to use one way syringes and come complete with a safety nozzle and FULL easy to use instructions covering 10 different types of the most popular cartridges. It takes little more than a couple of minutes to refill a print cartridge (whatever the make), and generally saves at least 50% off the cost of a new cartridge.

Using Refills with disposable head print cartridges in no way affects the warranty of your printer as the cartridge is considered a separate item. Also by using the PREMIER range of refills you will not lose out on the quality of print, in fact in most cases using these particular refills can improve the quality of print.

If you are unsure about using Inkjet Refills, call and speak to our staff who will be happy to send you a sample of the print out quality and a set of instructions, so that you can see the results and how easy they are to use, before you decide to buy.





	Ex Vat		Inc Vat
Single Refill Any Colour	£5.95	a	£6.99
Twin Refill Any Colour	£11.05	a	£12.99
Quad (Four) Refill Black Only	£19.57	a	£22.99
Tri-Colour Refill C/M & Y	£17.01	a	£19.99
Bulk 125ml Refill Kit Any Colour	£21.27	a	£24.99
Bulk 250ml Refill Kit C/M/Y or Black	£38.29	b	£44.99
Bulk 500ml Refill Kit Black Only	£59.57	b	£69.99
1ml Head Recovery Kit	£3.40	a	£4.00
125ml Cartridge Cleaning Kit	£3.40	a	£4.00
400ml Cartridge Cleaning Kit	£8.50	b	£9.99
TDQ Adaptor for Thinkjet Cartridge	£2.55	a	£3.00

COLOURS AVAILABLE FROM PREMIER INKS
Jet Black, Cyan, Magenta, Yellow, Brown, Dk Green, Lt Green, Dk Blue, Dk Red, Lt Red, Gold, Silver

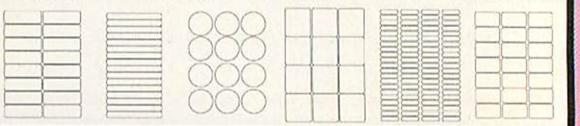
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		Ex Vat		Inc Vat
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J8160M 63.5x38.1mm (21 lps, 40 shts)	Addressing Labels	£11.00	b	£12.93
J8161M 63.5x46.6mm (18 lps, 40 shts)	Addressing Labels	£11.00	b	£12.93
J8162M 99.1x34mm (16 lps, 40 shts)	Addressing Labels	£11.00	b	£12.93
J8163M 99.1x38.1mm (14 lps, 40 shts)	Addressing Labels	£11.00	b	£12.93
J8165M 99.1x67.7mm (8 lps, 40 shts)	Parcelling Labels	£11.00	b	£12.93
J8666M 70x52mm (10 lps, 25 shts)	3.5" Disk, Face Only	£11.00	b	£12.93
J8651M 38.1x21.2mm (65 lps, 25 shts)	Mini Addresssing Labels	£11.00	b	£12.93
INKJET White *For COLOUR Printing!*				
J8365 99.1x67.7mm (8 lps, 25 shts)	Parcelling Labels	£18.00	b	£21.15
J8363 99.1x38.1mm (14 lps, 25 shts)	Addressing Labels	£18.00	b	£21.15
J8362 99.1x34mm (16 lps, 25 shts)	Addressing Labels	£18.00	b	£21.15
J8360 63.5x38.1mm (21 lps, 25 shts)	Addressing Labels	£18.00	b	£21.15
INKJET Clear				
J8560M 63.5x38.1mm (21 lps, 40 shts)	Addressing Labels	£18.50	b	£21.74
J8562M 99.1x34mm (16 lps, 40 shts)	Addressing Labels	£18.50	b	£21.74
J8563M 99.1x38.1mm (14 lps, 40 shts)	Addressing Labels	£18.50	b	£21.74
J8565M 99.1x67.7mm (8 lps, 40 shts)	Parcelling Labels	£18.50	b	£21.74
LASER				
L7000 Mixed Trial Pack	Various Sample Sheets	£5.00	a	£5.88
L7159 64x34mm (24 lps, 100 shts)	Addressing Labels	£20.50	b	£24.09
L7160 63.5x38.1mm (21 lps, 100 shts)	Addressing Labels	£20.50	b	£24.09
L7160M 63.5x38.1mm (21 lps, 40 shts)	Addressing Labels	£11.00	b	£12.93
L7160E 63.5x38.1mm (21 lps, 250 shts)	Addressing Labels	£45.00	d	£52.88
L7161 63.5x46.6mm (18 lps, 100 shts)	Addressing Labels	£20.50	b	£24.09
L7162 99.1x34mm (16 lps, 100 shts)	Addressing Labels	£20.50	b	£24.09
L7162M 99.1x34mm (16 lps, 40 shts)	Addressing Labels	£11.00	b	£12.93
L7163 99.1x38.1mm (14 lps, 100 shts)	Addressing Labels	£20.50	b	£24.09
L7163M 99.1x38.1mm (14 lps, 40 shts)	Addressing Labels	£11.00	b	£12.93
L7163S 99.1x38.1mm (14 lps, 25 shts)	Addressing Labels	£8.00	b	£9.40
L7164 63.5x72mm (12 lps, 100 shts)	Addressing Labels	£20.50	b	£24.09
L7165 99.1x67.7mm (8 lps, 100 shts)	Parcelling Labels	£20.50	b	£24.09
L7165M 99.1x67.7mm (8 lps, 40 shts)	Parcelling Labels	£11.00	b	£12.93
L7165E 99.1x67.7mm (8 lps, 250 shts)	Parcelling Labels	£45.00	d	£52.88
L7166 99.1x93.1mm (6 lps, 100 shts)	Parcelling Labels	£20.50	b	£24.09
L7167 199.6x289.1mm (1 lps, 100 shts)	Shipping Label	£20.50	b	£24.09
L7168 199.6x143.5mm (2 lps, 100 shts)	Shipping Labels	£20.50	b	£24.09
L7169 139x99.1mm (4 lps, 100 shts)	Parcelling Labels	£20.50	b	£24.09
L7173 99.06x57mm (10 lps, 100 shts)	Shipping Labels	£20.50	b	£24.09
L7263 99.1x38.1mm (14 lps, 25 shts)	Addressing Florescent Yellow	£11.00	b	£12.93
L7363 99.1x38.1mm (14 lps, 25 shts)	Addressing Florescent Pink	£11.00	b	£12.93
L7630 63.5 Dia (12 lps, 50 shts)	White Circular Labels	£13.00	b	£15.28
L7651 38.1x21.2mm (65 lps, 25 shts)	Mini Addressing Labels	£8.00	b	£9.40
L7651H 38.1x21.2mm (65 lps, 100 shts)	Mini Addressing Labels	£20.50	b	£24.09
L7654 76.2x46.4mm (12 lps, 14 shts)	Video Spine & Face Labels	£11.00	b	£12.93
L7671 76.2x46.4mm (12 lps, 25 shts)	Video Face Labels	£11.00	b	£12.93
L7674 145x17mm (16 lps, 25 shts)	Video Spine Labels	£11.00	b	£12.93
L7655 89x42mm (12 lps, 25 shts)	Audio Cassette Labels	£11.00	b	£12.93
L7656 46x11.11mm (84 lps, 25 shts)	35mm Slide Labels	£11.00	b	£12.93
L7664 70x71.9mm (8 lps, 25 shts)	3.5" Diskette Wrap Over	£11.00	b	£12.93
L7664H 70x71.9mm (8 lps, 100 shts)	3.5" Diskette Wrap Over	£20.50	b	£24.09
L7665 72x21.15mm (24 lps, 25 shts)	Mini Data Cartridge Labels	£11.00	b	£12.93
L7666 70x52mm (10 lps, 25 shts)	3.5" Diskette Face Only	£11.00	b	£12.93
L7667 133x29.61mm (9 lps, 25 shts)	Standard Data Cartridge	£11.00	b	£12.93
L7670 63.5 Dia (12 lps, 25 shts) FY	Florescent Yellow Circular	£11.50	b	£13.51
L7680 38.1x21.2mm (65 lps, 25 shts)	Mini Addressing Gold	£17.00	b	£19.98
L7690 38.1x21.2mm (65 lps, 25 shts)	Min Addressing Silver	£17.00	b	£19.98
L7170 134x11mm (24 lps, 25 shts)	Eurofolio/Filing Labels	£11.00	b	£12.93
L7171 200x60mm (4 lps, 25 shts)	Lever Arch Labels	£11.00	b	£12.93
L7172 100x30mm (16 lps, 25 shts)	Ring Binder Labels	£11.00	b	£12.93
LASER Mini-Sheets				
L2186 69.9x50.8mm (4 lps, 40 shts)	3.5" Diskette Face Only	£7.50	b	£8.81
L2163 101.6x50.8mm (4 lps, 40 shts)	Parcelling Labels	£7.50	b	£8.81
L2162 101.6x33.8mm (6 lps, 40 shts)	Addressing Labels	£7.50	b	£8.81
L2160 66.8x25.4mm (8 lps, 40 shts)	Addressing Labels	£7.50	b	£8.81
L2164 50x14mm (28 lps, 40 shts)	Suspension File	£7.50	b	£8.81
LASER Clear				
L7551 38.1x21.2mm (65 lps, 25 shts)	Mini Addressing Transparent	£15.00	b	£17.63
L7562 99.1x33.9mm (16 lps, 50 shts)	Addressing Transparent	£25.00	b	£29.38
L7562S 99.1x33.9mm (16 lps, 25 shts)	Addressing Transparent	£15.00	b	£17.63
L7563 99.1x38.1mm (14 lps, 50 shts)	Addressing Transparent	£25.00	b	£29.38
L7563S 99.1x38.1mm (14 lps, 25 shts)	Addressing Transparent	£15.00	b	£17.63
L7565 99.1x67.7mm (8 lps, 50 shts)	Parcelling Transparent	£25.00	b	£29.38
L7575S 99.1x67.7mm (8 lps, 25 shts)	Parcelling Transparent	£15.00	b	£17.63
LASER Business Cards				
L7413 90x50.8mm (10 lps, 25 shts)	Business Cards, Micro Perforated	£15.00	b	£17.63
LASER Name Badges				
L7418K 86.6x55.5mm (8 lps, 3 shts, 10 Holders)	Name Badge & Holders	£17.00	b	£19.98
L7418 86.5x55.5mm (8 lps, 25 shts) Refill Pk	Name Badge	£13.50	b	£15.86
LASER Postcards				
L7421 139.37x97.29mm (4 lps, 25 shts)	Postcards	£16.00	b	£18.80



INKJET CARTRIDGES

	Ex Vat		Inc Vat
HP51626A DJ Double Life	£17.02	a	£20.00
HP51633a DJ Portable Black	£15.25	a	£17.92
HP51625A Tri Colour Cartridge	£20.85	a	£24.50
HP51640A HP1200c Black	£17.00	a	£19.98
HP51640? HP1200c C/M or Y	£20.20	a	£23.74
HP51604A Thinkjet/Quietjet	£12.00	a	£14.10
HP51639A Paintjet XL Black	£14.95	a	£17.57
HP51606C Paintjet Tri Colour	£20.20	a	£23.74
HP51606A Paintjet Black	£22.20	a	£26.09
HP51606R Paintjet Red	£23.00	a	£27.03
HP51606B Paintjet Blue	£23.00	a	£27.03
HP51606Y Paintjet Yellow	£23.00	a	£27.03
Epson Stylus 800 Black	£8.00	a	£9.40
Epson Stylus Colour - Colour	£25.00	a	£29.38
Epson Stylus Colour - Black	£12.00	a	£14.10
Olivetti JP150 Black	£14.60	a	£17.16
Canon BC-01 Black	£14.00	a	£16.45
Canon BC-02 Black	£15.00	a	£17.63
Canon BJC600 Black High Cap	£8.00	a	£9.40
Canon BJC600 C/M or Y	£6.20	a	£7.29
Canon BJC4000 BC20 Black	£21.00	a	£24.68
Canon BJC4000 BCI21 Black	£7.00	a	£8.23
Canon BJC4000 BCI21 Colour	£12.00	a	£14.10
Canon JI-20c Integrex Colour	£18.00	a	£21.15
Canon JI-25B Integrex Black	£10.02	a	£11.77
Canon BJ300/330 Black	£11.50	a	£13.51
Canon BJC800 Black	£13.50	a	£15.86
Canon BJC800 C/M or Y	£17.00	a	£19.98

DUST COVERS

	Ex Vat		Inc Vat
PC 2 Piece Dust Cover	£6.00	a	£7.05
PC Mini Tower Dust Cover	£3.56	a	£4.18
PC 14" Universal Monitor Cover	£3.56	a	£4.18
PC 102 Key UK Keyboard Cover	£3.56	a	£4.18
Acorn A5000 All in One Dust Cover	£6.00	a	£7.05
Acorn A4000 All in One Dust Cover	£6.00	a	£7.05
Acorn A3010/3020 Dust Cover	£4.55	a	£5.35
Risc PC (1 Stack) Dust Cover	£6.00	a	£7.05
Small 80 Column Printer Cover	£3.56	a	£4.18
Large 132 Column Printer Cover	£6.40	a	£7.52
HP Deskjet 500/550/560 Cover	£3.56	a	£4.18
Canon BJ10 Dust Cover	£3.56	a	£4.18
Canon BJ200 Dust Cover	£4.56	a	£5.36
Canon BJC600 Dust Cover	£4.56	a	£5.36

LASER TONER

	Ex Vat		Inc Vat
Canon LBP-8 IV	£70.00	d	£82.25
Canon LBP-8 III	£59.00	d	£69.33
Canon LBP-4U	£52.00	d	£61.10
HP Laserjet III/IIID	£52.00	d	£61.10
HP Laserjet IIIP/IIP	£48.00	d	£56.40
HP Laserjet IIISI/4SI	£95.00	d	£111.62
HP Laserjet 4/4M/4MP/4P	£70.00	d	£82.25
HP Laserjet 4L/4ML	£48.00	d	£56.40
Qume Laser Direct (3 Sets)	£99.00	d	£116.33

Upgrades & Repairs

We can Fit any upgrade listed on these pages, or fix most problems while you wait in our showroom. In most cases we don't charge for fitting any of the products we supply.

Low repair costs for Acorn/PC or printers and monitors. Call for Quote.

WINTUNER & INIGUARD

Wintuner is a program that has been designed to get the best speed out of the Windows environment. It is ideal for machines that are underpowered such as the Risc PC with the 486 Card. Fine tunes the Windows environment.

Iniguard is a program which is designed to stop Windows becoming corrupt. A 3 stage recovery program and a master backup of ALL the important Initialisation files and the Autoexec.bat and Config.sys files.

Highly Recommended.

	Ex Vat		Inc Vat
Wintuner & Iniguard	£21.27	a	£24.99

FREE

Mouse Mat with any order over £20
Quote ref: MMKCS

RIBBONS

B=BLACK RIBBON
C=COLOUR RIBBON

			Ex Vat		Inc Vat
Amstrad DMP2000/3000	B	2482RN	£2.80	a	£3.29
Amstrad DMP4000	B	2426RN	£3.66	a	£4.30
Amstrad LQ5000	B	2886DN	£6.10	a	£7.18
Amstrad PCW8256/LQ3500	B	2944DN	£2.85	a	£3.35
Amstrad PCW9512	B	2949FN	£3.38	a	£3.97
Brother M1009/1024/1109/1209	B	2412FN	£3.90	a	£4.58
Brother M1818/1824L/1924L	B	2905DN	£4.88	a	£5.74
Citizen 120D/LSP10/Swift 24/9	B	2939DN	£2.85	a	£3.35
Commodore MPS1220/1230	B	2843RD	£4.50	a	£5.29
Commodore MPS1500/1550	B	2863RDB	£6.75	a	£7.93
Epson LQ100	B	2986RD	£4.10	a	£4.82
Epson LX100	B	2999RD	£3.83	a	£4.50
Epson LQ200/400/500/800/850	B	2477DN	£3.45	a	£4.05
Epson LQ1000/1050/1070/1170	B	2478DN	£4.10	a	£4.82
Epson FX/MX/RX80/FX/LX800	B	2273FN	£2.90	a	£3.41
Epson FX/MX100/FX/MX1000	B	2320FN	£3.36	a	£4.30
Epson LX80/86/90	B	2454FN	£2.12	a	£2.49
Fujitsu DL3300/3400, DX2200	B	2849DN	£3.75	a	£4.41
IBM 4207/4212 Proprinter X24	B	4846FN	£3.88	a	£4.56
Mannesman Tally 80/81	B	2698MS	£3.90	a	£4.58
NEC Pinwriter P220/P2+	B	2844RD	£3.03	a	£3.56
Oki ML182/183/192/193/195	B	2455RN	£3.17	a	£3.72
Oki ML320/321/380/390/391	B	2874RD	£3.32	a	£3.90
Panasonic KX-P1123/1124/1140	B	2904RD	£3.46	a	£4.07
Panasonic KX-P1080/1180/90	B	2905RN	£2.89	a	£3.40
Panasonic KX-P1524/1540/1624	B	2953RD	£4.55	a	£5.35
Panasonic KX-P2123/2124/2180	B	2984RD	£5.75	a	£6.76
Seikosha SL90/92/95/96	B	2920DN	£5.70	a	£6.70
Star LC10/20/100	B	2861FN	£2.29	a	£2.69
Star LC200	B	2954FN	£3.00	a	£3.53
Star LC24-10/20/200	B	2868DN	£2.86	a	£3.36
Star ND/NL/NR/NX10, NB24-10	B	2761DN	£3.85	a	£4.52
Taxan Kaga KP810/815/910/915	B	2223RN	£3.14	a	£3.69
Citizen 224/240/Swift 24-9	C	2964DN	£12.81	a	£15.05
Commodore MPS1500/1550	C	2863RDC	£9.38	a	£11.02
Panasonic KX-P2123/2124/2180	C	2985RD	£10.63	a	£12.49
Star LC10/20/100	C	2869FN	£6.00	a	£7.05
Star LC200	C	2959FN	£9.78	a	£11.49
Star LC24-10/20/200	C	2952DN	£9.63	a	£11.32

Special Offer — Startwrite
Word Processor £17.02 & Vat

Special Offer — Champions
4 Games in 1 £12.72 & Vat

Special Offer — 80watt Speakers
Amplified Mains Powered £58.00 & Vat

Special Offer — Joystick Controllers
for A3020/4000/5000 £20.00 & Vat

Special Offer — 386 PC Cards
for A3020/4000 £99.00 & Vat

Special Offer — Pinpoint
Database Sofware £39.00 & Vat

All above, while stocks last.

CABLES & ADAPTORS

Item	Description	Ex Vat		Inc Vat
Mains Lead 3 Pin Moulded 5 amp	Computer or Printer Power Lead	£3.70	a	£4.35
Mains Lead Extension M-F	Computer to Monitor Power Lead	£3.70	a	£4.35
4 Gang Extension	1 Mains Socket converted to 4, Fused	£6.50	b	£7.64
Parallel Printer Cable 1.8M	Normal Printer Cable PC/Acorn/Atari etc	£2.55	a	£3.00
Parallel Printer Cable 3M	Normal Printer Cable PC/Acorn/Atari etc	£4.55	b	£5.35
Parallel Printer Cable 5M	Normal Printer Cable PC/Acorn/Atari etc	£6.50	b	£7.64
Bi-Directional Parallel Printer Cable	Fast Data Transfer Cable	£11.00	a	£12.93
Centronics - Centronics Cable 2M	Switch Box Cable	£4.28	a	£5.03
Centronics - Centronics Cable 3M	Switch Box Cable	£6.50	a	£7.64
Serial Cable 2M 25 Pin M-F	All Pins Connected/Printer Cable	£4.28	a	£5.03
Serial Cable 5M 25 Pin M-F	All Pins Connected/Printer Cable	£8.50	b	£9.99
Laplink Cable 1.5M 25&9F-25&9F	Data Transfer Cable Null Modem (X-Over)	£8.50	a	£9.99
Midi Leads (Pair)	Music Data Transfer Cables 5 Pin Din	£8.00	a	£9.40
Phono Leads (Pair)	2xPhono Transfer/Extension Cable	£3.50	a	£4.11
Phono to Stereo Jack Convertor	3.5mm Stereo Jack to 2xPhono Plugs	£3.00	a	£3.53
VGA/SVGA Monitor Extension Cable 2M	15 Pin HD M-F	£6.50	a	£7.64
Keyboard Extension Cable 2M	Curly 5 Pin Din M-F Standard PC Keyboard	£6.50	a	£7.64
Keyboard Extension Cable 2M PS2	Curly PS2/Risc PC M-F Keyboard Ext	£6.50	a	£7.64
Mouse Extension Cable 2M	9 Pin D Type M-F Extender Cable	£6.50	a	£7.64
Joystick Extension Cable 2M PC	15 Pin D Type M-F Extender Cable	£6.50	a	£7.64
Joystick Splitter	Allows the Use of 2 Joysticks on a PC	£8.50	a	£9.99
A3010/3020/4000/5000 - Scart Lead 1.5M	15 Pin HD D Type to Euroscart (Not Sony)	£8.50	a	£9.99
A3010/3020/4000/5000 - CM8833 MKI	15 Pin HD D Type - 9 Pin	£8.50	a	£9.99
A3010/3020/4000/5000 - CM8833 MKII	15 Pin HD D Type - 9 Pin & Phono Leads	£8.50	a	£9.99
A3010/3020/4000/5000 - AKF17 & AKF30	15 Pin HD D Type - 9 Pin	£8.50	a	£9.99
SCSI 25 Pin D - Centronics	SCSI Interface to External Box/CD or HD	£12.00	b	£14.10
SCSI 50 Way IDC Ribbon Cable 1M	Internal SCSI Cable (Can be Custom made)	£ ASK	a	£ ASK
SCSI Centronics to Centronics 1M	External Daisy Chaining/Switch Box Cable	£14.00	b	£16.45
IDE 40 Way Cable 15" for 2 Hard Drives	Internal for 2x3.5" IDE Hard Drives or CD's	£3.00	a	£3.53
IDE 40 Way Sub Miniature Cable	Internal Cable for 2.5" IDE Hard Drive 6cm	£8.50	a	£9.99
IDE 40 Way Sub Miniature Cable Short	As above but only 4cm long (A1200, etc)	£7.00	a	£8.23
Panasonic CD Ribbon Cable 40 Way	Internal Cable for CD ROM to Interface	£3.00	a	£3.53
Panasonic CD Audio Cable	CD to Soundcard/Interface for Audio CD's	£3.00	a	£3.53
Sony CD Ribbon Cable 34 Way	Internal Cable for CD ROM to Interface	£3.00	a	£3.53
Sony CD Audio Cable	CD to Soundcard/Interface for Audio CD's	£3.00	a	£3.53
Mitsumi CD Ribbon Cable 40 Way	Internal Cable for CD ROM to Interface	£3.00	a	£3.53
Mitsumi CD Audio Cable	CD to Soundcard/Interface for Audio CD's	£3.00	a	£3.53
2xFloppy Disk Drive Ribbon Cable	Internal Floppy Disk Drive Cable 3.5"/5.25"	£3.00	a	£3.53
Power Cable Splitter 5.25" or HD/CD 2-1	Splitter to add an Extra 4 Pin Power Lead	£3.25	a	£3.82
Power Cable Splitter 3.5" 2-1	As above but for 3.5" Floppy Disk Drives	£3.25	a	£3.82
PS2 Keyboard Adaptor	Converts Std 5 Pin Din Keyboard to PS2	£3.50	a	£4.11
PS2 to 5 Pin Keyboard Adaptor	Converts PS2 Keyboard to Std 5 Pin Din	£3.50	a	£4.11
PS2 Mouse Adaptor	Converts Serial 9 Pin Mouse to PS2	£3.50	a	£4.11
Dongle Dangle 6cm	For use on Restricted Access Computers	£8.00	a	£9.40

For other cables not listed or specialist cables, please call with specification and we'll make it for you.

MULTI - MEDIA KITS

Item	Ex Vat		Inc Vat
Twin Speed IDE CD ROM	£50.00	d	£58.75
Twin Speed External CD ROM	£175.00	d	£205.63
Quad Speed IDE CD ROM	£115.00	d	£135.13
Twin Speed SCSI CD ROM	£110.00	d	£129.25
Quad Speed SCSI CD ROM	£160.00	d	£188.00
External CD Box & PSU	£65.00	c	£76.38

MONITORS

Item	Ex Vat		Inc Vat
14" SVGA Monochrome	£79.00	d	£92.83
14" SVGA 0.39 Colour	£150.00	d	£176.25
14" SVGA 0.28 MPR2 Colour	£165.00	e	£193.88
15" SVGA 0.28 MPR2 Colour	£250.00	e	£293.75
17" SVGA 0.28 MPR2 Colour	£490.00	e	£575.75
20" SVGA 0.31 MPR2 Colour	£735.00	e	£863.63
Acorn AKF53 Med Res Colour	£235.00	e	£276.13
Acorn AKF60 Hi Res Colour	£295.00	e	£346.63
Acorn AKF85 As Above, 17"	£690.00	e	£810.75

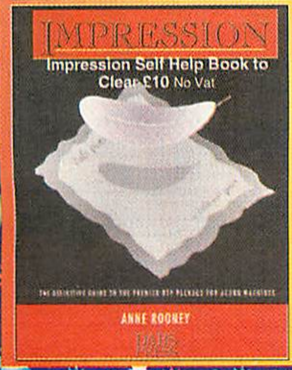
CD ACCESSORIES

Item	Ex Vat		Inc Vat
CD Caddy Holder	£5.00	a	£5.88
CD Disk Cleaner	£2.98	b	£3.50
CD Tray Flipper Holds 20	£2.55	b	£3.00
Empty CD Jewel Case	£0.50	a	£0.59
CD Protector Rings (Pack of 5)	£1.50	a	£1.76

ACORN Software

Item	Ex Vat		Inc Vat
10 out of 10 Software All Titles	£16.90	a	£19.86
1st Word Plus	£17.50	a	£20.56
Arc Comm2	£35.00	a	£41.13
Artworks CD Ver	£110.00	a	£129.25
Avery Label Templates	£5.00	a	£5.88
Black Angel	£22.98	a	£27.00
Borders for Impression 1	£8.51	a	10.00
Borders for Impression 2	£8.51	a	£10.00
Canon Fodder	£18.48	a	£21.71
Crystal Maze	£24.00	a	£28.20
The Crystal Rain Forest	£35.50	a	£41.71
Dataword	£11.91	a	£13.99
Dune II	£28.50	a	£33.49
Easiword v2	£25.00	a	£29.38
Easyfont 3	£25.00	a	£29.38
Euclid 2	£25.00	a	£29.38
Midnight Graphics Express	£15.00	a	£17.63
Guile	£18.00	a	£21.15
Labeller	£7.00	a	£8.23
Magic Pockets	£19.50	a	£22.91
Micro English	£18.00	a	£21.15
Micro French	£18.00	a	£21.15
Micro German	£18.00	a	£12.15
Pendown Etoiles	£41.70	a	£48.99
Pendown Plus	£68.00	a	£79.90
Pinpont	£45.00	a	£52.88
Pinpoint 2	£65.00	a	£76.38
Pipedream 4	£80.85	a	£95.00
Quest for Gold	£12.00	a	£14.10
Simon the Sorcerer	£28.00	a	£32.90
Tech Writer 2	£125.00	a	£146.88
Tower of Babel Comp.	£21.28	a	£25.00
Wolfenstein 3D	£22.00	a	£25.85
Wordz	£50.00	a	£58.75
Worra Cad	£65.00	a	£76.38
Xenon 2	£18.00	a	£21.15
Zool (1.44MB HD Only)	£14.00	a	£16.45

Huge range of Software available, call for list.



ACORN UPGRADES

Item	Ex Vat		Inc Vat
4-8 MB Up. (310,440,400/1)	£249.00	c	£292.57
4-8 MB Up. (A3000/5000)	£249.00	c	£292.57
Arm 3 (A3000/400) & FPA Socket	£114	c	£133.95
Arm 3 As above with FPA.	£179.00	c	£210.32
FPA Upgrade for A5000/540	£79.00	c	£92.82
A3010 1-2 MB Upgrade	£45.00	b	£52.87
A3010 2-4 MB Upgrade	£89.00	c	£104.57
A3010 1-4 MB Upgrade	£132.00	c	£155.10
A3020/4000 2-4 MB Upgrade	£83.00	b	£97.52
A5000 2-4 MB Upgrade	£79.00	b	£92.82
A3000 1-2 MB Upgrade	£52.00	b	£61.10
A3000 1-4 MB Upgrade	£114.00	c	£133.95
A3000 Serial Port Upgrade	£19.00	b	£22.32
A310 4Mb Upgrade	£137.00	c	£160.97
Risc OS Carrier Board (A310)	£22.00	b	£25.85
MEMC 1A Upgrade Kit	£29.00	b	£34.07
A400/1 1Mb Upgrade per meg	£45.00	b	£52.87
Risc OS 3.1 Up. Rom & Books	£75.00	d	£88.12
Midi Expansion Card	£79.00	c	£92.82
CD ROM Drives SCSI	£POA	d	£POA
CD ROM Drives IDE	£POA	d	£POA
Scanlight Junior Handheld	£175.00	d	£205.62
VIDI Archimedes	£55.00	d	£64.62
Hard Drives (int) A3010/3020			
A3010 HD Interface	£69.00	d	£81.07
A3010 HD Int.Face & User Port	£79.00	d	£92.83
85Mb Hard Drive 2.5" IDE	£90.00	d	£105.75
120Mb Hard Drive 2.5" IDE	£95.00	d	£111.63
170Mb Hard Drive 2.5" IDE	£100.00	d	£117.50
210Mb Hard Drive 2.5" IDE	£130.00	d	£152.75
340Mb Hard Drive 2.5" IDE	£160.00	d	£188.00
Hard Drives (int) A4000/5000			
420Mb Hard Drive 3.5" IDE	£105.00	d	£123.38
560Mb Hard Drive 3.5" IDE	£125.00	d	£146.88
520Mb Hard Drive 3.5" SCSI	£175.00	d	£205.63
1Gb Hard Drive 3.5" SCSI	£275.00	e	£323.13
Hard Drives (ext) A3000			
-A3000 Req Interface & Case:			
A3000 IDE Interface Podule	£69.00	d	£81.07
A3000 Hard Drive Case	£65.00	d	£76.38
210Mb Hard Drive 3.5" IDE	£85.00	d	£99.88
420Mb Hard Drive 3.5" IDE	£105.00	d	£123.38
560Mb Hard Drive 3.5" IDE	£125.00	d	£146.88
Acorn Original Mouse	£25.00	b	£29.38
Acorn Replacement Mouse	£12.00	b	£14.10



Novelty Mouse Mats	Ex Vat		Inc Vat
Hamburger	£3.56	a	£4.18
Pig	£3.56	a	£4.18
Clown	£3.56	a	£4.18
Ladies Top	£3.56	a	£4.18
Male Torso	£3.56	a	£4.18
Football	£3.56	a	£4.18
Cat	£3.56	a	£4.18
Mouse	£3.56	a	£4.18
Pen	£3.56	a	£4.18
Car	£3.56	a	£4.18
Motorbike	£3.56	a	£4.18
Frog	£3.56	a	£4.18
Cosmic Rings Screen Saver Set	£9.00	a	£10.58
Battlescape Screen Saver Set	£9.00	a	£10.58

INTERNET

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Want your own EMAIL address?

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Schools & Networking Section

NEW

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for Schools & Teachers

Our PC's are built to very high and exacting standards to take advantage of todays Multi Media applications.

KCS are offering any school or teacher that wants to upgrade from an old acorn computer to a new Multi Media PC, the chance to do so at unbelievably low prices. We can take one Acorn or an entire network of them in Part Exchange. As budgets get smaller and resources, tighter. The Multi Media PC's offer an excellent way of utilising your IT budget to maximum effect.

All PC's for schools now come supplied with Iniguard Protect, which is a program that makes Windows a captive system. This means that the transition from Acorn to PC is as painless as possible. Iniguard Protect will stop any unauthorised access to the computer and ensure that the PC gives years of trouble free performance.

We are able to offer finance for single machines and leasing for several machines, we can even incorporate the network installation costs into the lease if you require.

KCS, with a wealth of experience in school networks and Multi Media machines are now best placed to serve your needs, please call or fax your requirements and we'll show you how we can be extremely competetive yet show excellent support when you need it most, in I.T.



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UK Keyboard
Mouse
Twin Speed CD ROM
16 Bit Stereo Soundcard
Dos & Windows
Encarta 95
Microsoft Works

SRP £879
Teacher £850
School £800

DX4 - 100 - 256k Cache
8Mb Ram
560Mb Hard Drive
VLB 1Mb Graphics Card
VLB Enhanced I/O
1.44Mb Floppy
14" SVGA Colour Monitor
UK Keyboard
Mouse
Quad Speed CD ROM
16 Bit Stereo Soundcard
Dos & Windows
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SRP £999
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School £910

Arcshare™
Acorn to PC Networking Software

Dealer enquiries welcome.

ArcShare

Arcshare is an Acorn to PC networking packages which makes the PC behave as if it was an Acorn Access system. This allows fast easy transfers of data from or to either machine via a simple to control interface on the PC. The Acorn on the other hand needs no special software other than Access. The Acorn is then able to see all the files on the PC just like any other networked drive, whats more, all the files stored on the PC have the correct filetype, so they can be loaded and used straight away.



Available Now, no special hardware required.

Arcshare Server 1.4 **£99** & Vat

School Network SERVER

Dealer enquiries welcome.

KCS have developed the KCS NetServer system for entire school network management.

The NetServer utilises the advanced Networking and security features of Microsoft Windows NT environment and the recently launched Arcshare, Acorn to PC networking software.

The NetServer will allow Acorn computers to talk to PC computers and Macintosh at the same time on the same network. Files and printers can be shared no matter were they are on the network. The high performance nature of the two models of NetServer are ideal for fileserving in establishments that require a high level of useability and integrity.

NetServer 1000
100Mhz Processor, 24Mb RAM, 1Gb IDE Hard Drive, Quad Speed CD ROM, Windows NT 3.5x, 1.44Mb Floppy, PCI Graphics Card, MPR2 Colour Monitor, 100Mbit PCI Network Card.

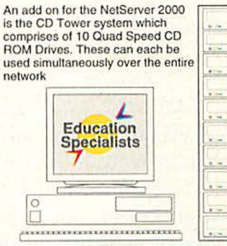
Free Installation *£2750.00*

NetServer 2000
100Mhz Processor, 32Mb RAM, 2Gb SCSI Hard Drive Stripe Set, Quad Speed CD ROM, Windows NT 3.5x, 1.44Mb Floppy, PCI Graphics Card, MPR2 Colour Monitor, 100Mbit PCI Network Card 2Gb DAT Backup Unit.

Free Installation *£4250.00*

Using the NetServer at the heart of a network enables easy network management in one machine with access to Macs, Acorns, PC's, and even Unix systems. The real beauty about this system is that the "Client" machines don't notice anything different about the network, as Arcshare and Windows NT effortlessly blend together to give full control and file manipulation.

An add on for the NetServer 2000 is the CD Tower system which comprises of 10 Quad Speed CD ROM Drives. These can each be used simultaneously over the entire network



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Iridium Laser/Inkjet Paper 100 grm A4 500 shts	£6.00	d	£7.05
Iridium Laser/Inkjet Paper 100 grm A3 500 shts	£14.00	d	£16.45
Laser Plus Laser/Inkjet Paper 90 grm A4 500 shts	£5.10	d	£5.99
Laser Plus Inkjet Coated Paper for Colour Printing A4 200 shts	£16.00	d	£18.80
Premier Matt Coated Inkjet Paper for Colour Printing A4 200 shts	£14.00	d	£16.45
Premier Matt Coated Inkjet Paper for Colour Printing A4 50 shts	£5.00	b	£5.88
Hewlett Packard Glossy Paper 51636J A4 50 shts	£41.00	b	£48.18
Premier Gloss Coated Inkjet Paper for High Quality Colour Printing A4 50 shts	£35.00	b	£41.13
Premier Gloss Coated Inkjet Paper for High Quality Colour Printing A4 20 shts	£16.00	b	£18.80
Canon LC-101 Coated Inkjet Paper for Colour Printing A4 200 shts	£18.00	d	£21.15
Canon LC-101 Coated Inkjet Paper for Colour Printing A3 100 shts	£41.00	d	£48.18
Epson Coated Inkjet 720 DPI For High Quality Colour Printing (Stylus) A4 200 shts	£19.00	d	£22.33
Epson Coated Inkjet 360 DPI For Colour Printing on Stylus Colour A4 200 shts	£17.00	d	£19.98
Premier Inkjet Transparencies for Overhead Projectors A4 50 shts	£30.00	b	£35.25
Premier Inkjet Transparencies for Overhead Projectors A4 20 shts	£15.00	b	£17.63
Hewlett Packard Inkjet Transparencies for Overhead Projectors 51636G A4 50 shts	£40.00	b	£47.00
Avery Inkjet Transparencies for Overhead Projectors A4 50 shts	£34.00	b	£39.95
3M Laser Transparencies for Overhead Projectors A4 50 shts	£25.00	b	£29.38
Premier Laser Transparencies for Overhead Projectors A4 50 shts	£25.00	b	£29.38
Premier Laser Transparencies for Overhead Projectors A4 20 shts	£12.50	b	£14.69

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office data

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Copytravel - Portable	£4.26	b	£5.00
Copyplus Desktop	£7.50	b	£8.81
Copyplus Solid Base	£12.00	c	£14.10
Copyplus Flexible Arm	£12.72	c	£14.95
Copyplus A3 Extension Kit	£7.00	b	£8.23
Various Accessories			
Ergo Mouse Pad - Hard Mat	£4.26	b	£5.00
Ergo Mouse Tray & Wrist Rest	£6.00	b	£7.05
Mouse/Scanner Holder	£2.50	b	£2.94
Novelty Cat Mouse Holder Red	£2.50	b	£2.94
Novelty Cat Mouse Holder Black	£2.50	b	£2.94
Novelty Cat Mouse Holder Grey	£2.50	b	£2.94
Wildlife Mouse Mat	£4.00	a	£4.70
Wildlife Wrist Rest	£4.50	b	£5.29
Dinosaur Mouse Mat	£4.00	a	£4.70
Dinosaur Wrist Rest	£4.50	b	£5.29
Combo Pad Thick Mouse Mat	£5.25	b	£6.17
Keyboard Extenders	£16.00	d	£18.80
Keyboard Calculator	£4.26	a	£5.00
Keyboard Station (PC)	£15.90	d	£18.68
Wrist Support Fabric	£3.00	b	£3.52
Wrist Support Plastic	£4.90	b	£5.76
Disk Porter Ring Binder 3.5"	£4.26	b	£5.00
Disk Clips (3) Ring Binder 3.5"	£3.25	a	£3.82
Disk Pocket Leatherette holds 6	£6.00	b	£7.05
Disk Mailer holds 6 Reuseable	£3.50	a	£4.11
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Universal 2 Pce Printer Stand	£3.00	c	£3.52
As Above with Printout Tray	£6.50	d	£7.64
Stax 132 Column Printer Stand	£13.00	d	£15.28
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Economy Glass Filter 14"	£18.40	d	£21.63
Economy Glass Filter 15"	£21.50	d	£25.26
Economy Glass Filter 17"	£65.00	e	£76.38
Light Glass Screen Filter 12-15"	£56.00	e	£65.80
Dark Glass Screen Filter 12-15"	£66.00	e	£77.55
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Risc PC Extra Slice & PSU	£99.00	d	£116.33
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Risc PC Heavy Duty Keyboard	£64.00	d	£75.20
Risc PC Keyboard Extension	£6.50	b	£7.64
Risc PC Mouse Extension	£6.50	b	£7.64
Risc PC Mouse Mat (Rare)	£4.00	b	£4.70
Risc PC 2nd HD Fixing Kit	£6.00	b	£7.05
Risc PC Memory 4Mb	£100.00	c	£117.50
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Risc PC 700 Processor Board	POA	d	POA

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A collection of over 150 of the very best PC Shareware & PD games available all on one CD ROM. Includes DOOM & Apoge Stuff **£15** & Vat

MODEMS

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Arcfax Software	£28.00	b	£32.90
ArcComm Software	£40.00	b	£47.00
Modem Cable	£8.50	b	£9.99

Opening Hours

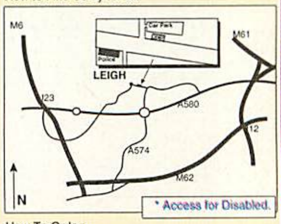
Monday		9am-6pm
Tuesday		9am-6pm
Wednesday		9am-6pm
Thursday	Late Night	9am-8pm
Friday	Late Night	9am-8pm
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Letters

Direction 2000?

After listening to comments at work and from reading a copy of *Computer Shopper*, I feel compelled to write and ask can Acorn survive beyond the year 2000?

Acorn has been around, making computers for some time now. Its claim to fame was the famous, but now archaic BBC micro. The BBC micro, with government backing, took the education market and more by storm, but sadly it really only had its success in the British education market, a market which today Acorn still relies on for most of its computer sales.

In 1987, Acorn launched a new machine, the Archimedes, and later RISC OS. At the time, the Archimedes was far advanced with full 8-bit stereo sound as standard, and a 32-bit RISC processor, but Acorn only really pushed the machine in the educational sector. April 1994 saw the launch of a new Acorn machine, the Risc PC – an excellent machine – but once again, Acorn really only pushed the machine in the traditional Acorn market place – the education sector.

1995 saw the launch of the A7000; again this is quite a powerful machine, but as before it is aimed at the education sector as are all Acorn machines, a sector that is shrinking every year.

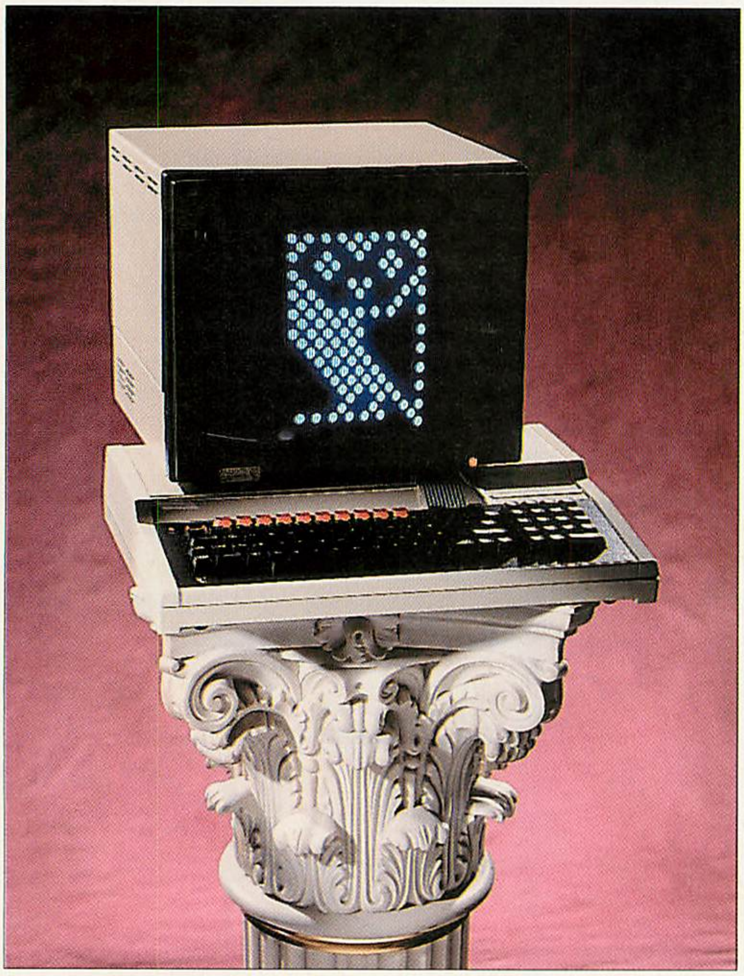
Quite a lot of school governors come from a business background where all they ever worked on were PCs or Macs. These are both good machines. The school governors tour the school, now and again, and what do they find: Acorns, a name they have never heard of. At their regular meetings, it is decided that because they are not industry standard – i.e. not used in any large volume by business – they should be discarded in favour of either PCs or Macs. In response, Acorn launched the Risc PC, a dual-processor machine that can behave and run like a PC, but only if you spend an extra £99. Now, considering you can buy a DX2 for half the price of a Risc PC with a second processor in it, it is understandable why many school IT co-ordinators are finding it increasingly difficult to justify the reason for buying Acorns when they are not made as industry standard.

What Acorn needs to do to stop the decline of its machines in schools is to cut its prices – but not the good standard of their machines – and spend more on advertising. I know Acorn does not have a multi-million pound advertising budget, but the odd advert now and again in *Computer Shopper*, a magazine that supports the Acorn platform, most certainly would not go amiss. Also, I feel Acorn should also try to market its machines to businesses and further educational establishments which are dominated by PCs or Macs. Maybe if Acorn does this, it might stand a good chance of surviving into and beyond the year 2000.

Paul Stewart
Via the Internet

Small problem with this solution. Acorn is a company that is making serious losses, and you're suggesting it cuts its prices, and ups its spending. Not the soundest business strategy, is it?

Face it: Acorn can't cut its prices any more than it just has, and it's going for the education market hook, line and sinker. The day Acorn can afford to advertise heavily is the day the Acorn market has turned around completely. See Viewpoint. (MM)



The old faithful BBC series (remember that owl?) got Acorn entrenched in the Education market, where it remains today. Should Acorn be looking at other areas to survive, though?

Austria user

I have been a reader of the excellent *Acorn User* magazine for three years, and I have owned an Acorn computer for five years. Here in Austria there is no local magazine which publishes one word about Acorn computers, so it's not possible to live without *Acorn User*.

It would be nice to read more about Acorn's plans in the international and German-speaking markets.

Peter Bauer
Via the Internet

We hope to be covering the international scene soon, especially the Antipodean markets. (MM)

Brilliant budget

After reading your Free Ads section in an issue months ago, I discovered an advert from a young man searching for PD Soundtracker or Digital Symphony music. As I am also a music enthusiast, I gave him a call.

After a discussion about swapping discs etc, he mentioned he was starting a PD and budget software company, but he had no money to advertise. He then said he'd send me his catalogue on disc, and lo and behold, it reached me by first class post within two days. I found his catalogue to be of excellent value, and immediately popped an order in the post that day. Three days later my discs arrived and I was especially pleased with them.

I think it's such a shame that quality companies like this, who provide such a good service and cannot afford to advertise, go unnoticed. I am writing this letter to inform others of this young man's company and its excellence. For anyone who's interested, the following details should help. You can write to: 'To sell software', Pebble Patch, Mislingford Road, Swanmore, Hants SO32 2QD. Disc prices range for various products; I believe music discs are compacted and are only £1

each. P&P is minimal at just 15p per disc, and there are currently many special offers running.

R Johnson
Birmingham

Small enterprise is an important part of the Acorn community, and it was the birthplace of the currently thriving Public Domain market. I can remember how excited I was when I received my first PD disc from Sandie the Walrus, he of *StickyBD* fame. I wonder what happened to old Sandie... (MM)

Dopey dealer

I am writing to tell you about a local computer supplier who could basically do with being told a few home truths about Acorn machines. I am sure this problem is also present in other suppliers, so this one will remain nameless. The shop is split into two parts, one dealing with the 'serious business machines', and the other with more games-oriented machines. There is no sign of anything Acorn in the business shop, but walk into the other shop and you are greeted by a Risc PC and an A4000. Why can't they realise that Acorn machines are just as viable as the PCs and Macs in the workplace?

I have visited this shop on two occasions, and both times I have found the staff having trouble with the Acorn machines. The first time might be excusable, as they were trying to persuade their 486 PC card in the Risc PC to produce sound, but they obviously didn't understand the machine at all, as my second visit shows.

They were trying to amend a text file within an application, for their own needs. They double-clicked on the file and a few seconds later there was a cry: 'What's that?', as the *Edit* icon appeared on the icon bar and the file was displayed. Any self-respecting Acorn user would be worried if this *didn't* happen. Then they changed the file and saved it.

Then they tried running the application, which failed to work. Trying to load the file into *Edit* again caused an error (file open) which admittedly shouldn't have happened, but look! That thing's still on the icon bar! A *double-click* on the icon bar brought up two new documents, as would normally be expected. But 'They're empty! Where's the file gone?' was the reaction. A frantic search through *Edit*'s icon bar menu revealed nothing.

So, try double-clicking the file again: file open error. Panic! The best solution: switch off the computer, then switch it back on and repeat the process. Still no result, but the reaction? 'Acorns are rubbish.' These are supposedly computer-literate people who have to advise customers on the best machine to buy, and they do not have the common sense to try to find out what is wrong just by learning the basics. Acorn machines are so intuitive to use that any skills learnt can be applied to any task. Surely this would make them much better equipped to advise people as to how to spend their money?

Like most people, they are obsessed with the fact that 'PCs are better because everybody has them.' It doesn't matter that they are backward machines which force users to learn new skills for every application. Compare them to boats: Acorn machines are small, fast speedboats which can travel quickly and effectively, while PCs are huge super-tankers which are not manoeuvrable at all, taking a long time to speed up, slow down or change course, but they are 'industry standard'.

Craig Burton
Guernsey

Bear in mind that the first computer you use has quite an influence on what you think. For example, I got a Power Mac not long ago, and could I change the file type of some un-typed files I had? No way, so I couldn't load them. But to a Mac user this is perfectly normal: it's just that you work in a different way. That doesn't excuse the dealer's complete ignorance of what it sells, but it might help to explain why it happens. (MM)

Viewpoint

I've got an Australian friend – well, actually she's got dual nationality, but she's spent her entire life living down under, and has only spent about a year living in the London area, so I reckon she's still pretty Australian. Anyway, she reckons that she's going to stay here, rather than go back to Oz, and do you know why? Get this: she likes the way we Brits moan about absolutely everything, and she's getting into it herself.

'God, the weather in this country's mad,' she says, conveniently forgetting that her native Melbourne has such freaky weather that they call it 'four seasons in one day.' 'And the public transport... how do people cope?' she moans, enjoying every minute of it. 'I love complaining,' she says. 'It's just so therapeutic.'

This makes me think. Do we Brits always complain? Are we all a bunch of Wingeing Poms? Judging by the number of letters I receive starting 'I am a loyal Acorn user and I love my computer, *but...*' I think we probably are. From blaming the recession for the lack of available jobs, to moaning about the weather *even though it's beautifully hot*, we just love to hate ourselves. As if proof were needed, find me another country where one of the most popular TV programmes is a soap opera about East End folk who are constantly depressed. It makes me want to shout 'Cheer up!' very, very loudly, but I still watch the bloody thing.

Acorn users are, therefore, incredibly British in their attitudes. Can Acorn do anything right? We get complaints about the lack of features in the operating system, vitriolic diatribes about the slipping education market, moans about the selling out of Acorn companies to 'the other side'; it seems that most people who own an Acorn like a good old bitch. If you don't believe me, go along to the Acorn World Show, find someone who looks a bit uptight, and whisper in their ear: 'So, why doesn't Acorn advertise on TV, then?' Just don't expect to be able to tear yourself away from the ensuing argument for about four hours (and that's if you're lucky).

But why are we so uptight? Acorn users would be the first to admit that life would be a complete bummer if there were PCs, Macs and nothing else. Life is rosier on the RISC OS side, even if there are features missing and smaller budgets. Personally, I can do almost everything I want on my Acorn, and it's quick, the software's cheap, and it impresses my misled friends who own Pentium boxes. It's also taught me about the theory of DTP, databases, spreadsheets, presentation packages and so on, so I feel competent about answering the 'you know about computers, can you help me' question that friends of friends fire at you at cocktail parties.

And now, the latest bright point in my Acorn-based computer life is my introduction to the World Wide Web and the HTML mark-up language. Designing the *Acorn User* WWW site was a gas, and the tools available on the Acorn, while not as sophisticated as on the Mac, are more than capable of producing excellent results; the learning process will enable you to create WWW pages on any system. The WWW is the newest publishing medium, and knowledge of HTML could become as important as understanding the concept of frame-based DTP is today.

So if you're feeling down and fancy a good moan, don't sit there and belittle your Acorn system and Acorn's marketing policies. Just pop round to a mate's, or to your local computer dealer, and try playing with a PC for an hour. Then go back to your Acorn.

Ah, that's better, isn't it.

Au revoir

This is the last edition of *Acorn User* that I'll be editing: from next month the magazine has a new editor in the shape of David Matthewman, and a new managing editor, Pam Turnbull. I'd like to thank them for all their support over the last two years, and wish them all the best for the future.

I'd also like to thank all you readers out there in newsstand land for your continued support, and I trust that you'll keep your comments coming in, so *Acorn User* can continue to be the best. Keep up the good work!

Mark Moxon

Stereoworld



Tom Cooper reveals some personal *Dune II* tips

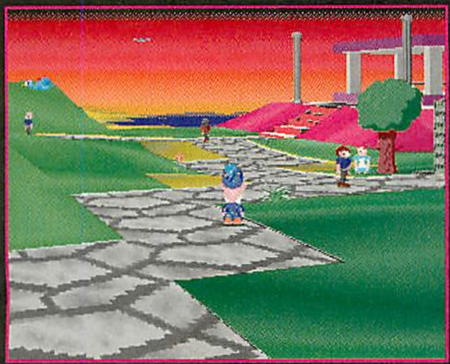
I've just received a bundle of discs from the Fourth Dimension – after a bit of a quiet spell, they're entering the market again with a new entertainment product. If you've been a regular reader of *Acorn User*, you'll probably have seen a stereogram nestling in the pages of *INFO before now. They're commonly referred to as *Magic Eye* pictures, and they've been popping up all over the place in the last couple of years. To the uninitiated, a stereogram appears to be a random jumble of dots, but if you're able to squint at it in a particular way, a 'hidden' three-dimensional image will appear.

The illusion of depth is created by building up a repeating pattern of dots, and then shifting parts of the picture slightly depending on the intended depth. When a viewer 'looks through' the image, sections of these patterns overlap in different ways. In an attempt to understand the cloud of dots, the brain creates the illusion of a three dimensional object. So much for the theory. In practice, it can be a little more tricky since to see the effect you have to focus your vision behind the picture. Some people possess this knack and can spot the images instantly – others like myself end up squinting, peering at the screen, and moving their heads back and forth for hours on end.

Stereoworld, written by Gordon Key, aims to provide a full stereovisual experience for those with the gift, and it offers the viewer still images, animations, and three simple games. It also gives you the opportunity to create your own stereograms from sprites or *Draw* files, or its own stock of predefined images. The first part of the package consists of a good number of normal stereograms, and they are presented to the user through a Desktop application. A simple tool bar allows you to step through them individually or jump to a particular image from a menu. It's also possible to switch to a full screen view, removing the distractions of the Desktop if you're working in a large screen mode. Most of the static images allow you to reveal the hidden image used to create the stereogram – useful if you just can't grasp what you're staring at.

A good variety of scenes are supplied, including pictures of jet fighters, dolphins and computers. The images themselves are either made out of blocks of completely random pixels, or various distorted thumbnail sprites. I find the thumbnails easier to squint at – the overlap is more obvious – but there's plenty of choice so there should be something to suit everyone. If you discover a stereogram which is particularly to your taste, *Stereoworld* allows you to save the image as a sprite or print it out.

Although I must admit I'm not the world's leading authority on stereograms, I was pleasantly surprised by the breadth of the package – the stereogram versions of *Breakout* and *Lander* should keep all but the most cross-eyed viewer satisfied. On a cautionary note, however, after I'd spent a good hour or so with my eyes focused a foot behind the monitor screen, I discovered that it's pretty tricky to get them to focus anywhere else – word processing becomes a definite challenge. The Fourth Dimension can be contacted on 0114-278 1091.


Berty's forthcoming game, *Darkwood*, takes a further twist...


Darkwood uses some rather nifty shading routines.

Dune too

As revealed last month, Tom Cooper's a bit of a *Dune II* fan, and he's given me a few strategies that he finds particularly useful. His long-term technique is to place a heavy guard on the spice fields and prevent enemy harvesters from working there. Once they run out of spice they're unable to manufacture anything, and this gives you a free licence to walk on in and take them over. When the level's spice fields have been mined dry, the harvesters can still be used as reconnaissance vehicles or decoys. They're also quite good at removing the threat of enemy footsoldiers – simply drive over the top of them.

If you're playing as the Ordos and you're on a later level in which two other Houses have been pitted against you, the Deviator can be used to great advantage. Instead of forcing the confused units to attack their own House, order them to attack your other enemy. They, themselves, have no qualms about this, and to add to the fun, the victims don't defend themselves, thinking they're still on the same side – now that's what I call a fair fight.

You might have noticed

that rocket launchers and rocket turrets have similar ranges, so if you send a launcher to attack a turret, they both get hit by each other's fire. Tom's found a crafty way of sidestepping this problem – the launchers are pretty inaccurate, so if you order one to attack an area one square away from the actual target, it will overshoot every so often and hit the real target. This technique means that destroying the object will take longer, but your launcher is safely outside the range of the turret so it should be able to drive away without a scratch.

Fire and Ice

If you've just picked up a copy of Graftgold's classic game *Fire and Ice*, you might be interested to hear of a few tips that will make your passage through the earlier levels a little bit easier. If you've not come across them already, there are plenty of secret exits and bonuses to be picked up, and I've been digging a few out for you. Starting with the first level of the first world, you can find an extra life award and another puppy to lead to safety by climbing the steps above the ice door and heading left, jumping over the floating spikes. You can collect up to three extra lives on this level if you're careful, and they'll prepare you for the dangers you will face as your quest continues.

There are more secrets to be discovered on the second level – if you guide Cool Coyote to the far right of the map you will find yourself climbing up a slope to be greeted by several skiers, a brace of penguins, and a badger. Releasing a snowflake bomb at the top of the incline will reveal a number of hidden platforms and bonus blocks. Instead of bombarding them with ice pellets to collect your rewards, hop onto the first small block and make your way upwards. If you jump vertically from the fourth bonus square, you should find a secret exit that will whisk you off to the last level in the ice world. The snowballs that tumble from the sky at various occasions might be of some use here – you can make them roll in a particular direction by firing ice pellets at them. They're particularly devastating when they're rolled down a hill towards an enemy, and this technique can be used against the Yeti at the end of your journey through the ice world.

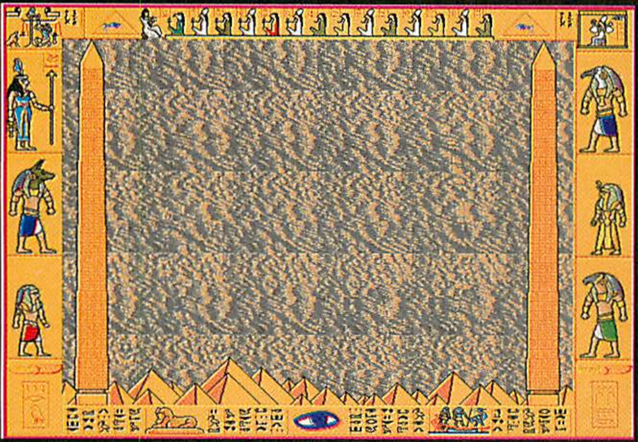


Well, this is the 'dark' – where's the 'wood'?

The first level of the second world holds a couple of surprises – the cavern below the ice door contains a hole through the bottom of the map that takes you to the next level, and touching the sparkles floating a little higher up will create a bridge out of the cavern. They also activate some hidden blocks allowing access to the floating platforms above the landscape – there's a whole stack of bonuses up there, as well as another cute puppy. It's worth pointing out that although they're not harmed by your average enemy, those puppies aren't indestructible – get them too close to a stormcloud and, well, they're liable to be vaporised. Don't say I didn't warn you.



This image conceals a teapot...



...and there's a skull hiding behind this one – or are they the other way around?

Stop press

I've just got room to tell you that Tom Cooper has sent me some more screenshots showing *Darkwood's* all-new rotation engine in full swing. The speech system's been overhauled as well, allowing improved interaction between your wizard and the other characters wandering about the landscape. I'll be road-testing the full version as soon as it arrives, so take a look at the photos and prepare yourselves to play what could be the most involving arcade adventure game for the Acorn so far.

That's all there's space for this month, but I'll be back next time with more news, hints and tips. If you've any comments or ideas, don't hesitate to drop me a line – either by post to the Game Show, *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to hal@acornusr.demon.co.uk. See you soon.

Steve Mumford

Alone in the Dark

Supplier: Krisalis Software
Tel: (01709) 372290
Price: TBA

I am in the fortunate position of announcing the imminent arrival (at the Acorn World Show) of a rather popular game called *Alone In the Dark*. The arrival of this game is more significant than you might first think as it truly marks the turning of the tide towards the 'super league' of the PC market.

At the time of writing, the game hasn't been finished, so no possibly misleading PC screenshots – I'll hold off till I've got the real thing. Instead here are a few choice words on the product to be released.

Alone in the Dark is a PC classic. Indeed it was the first of the Super Graphic games for the 386/486 SVGA market and featured almost true cartoon animation with you playing the hero from an overhead view battling it out with the forces of evil.

If you have ever been to EuroDisney then you may have wandered into the Haunted House ride they have there; it's full of everything creepy with that distinct Edwardian edge. That is exactly the feeling you get when exploring the dangers in *Alone in the Dark*.

The object is to discover the secrets that have been kept well guarded for goodness knows how long. You can explore the mansion and interact with just about everything you can see, with the rewards being the uncovering of a useful item to protect yourself with or maybe something to lighten up those dark corners. Interaction is by the good old fashioned menu-driven system with simple icons for certain key items; very handy when something is coming for you fast.

All manner of creatures inhabit the house from rabid dogs that wear you down to nippy little rats that cause havoc with whatever you might be holding. For combat there are knives, daggers and even guns; these should all have selective targets for maximum effect.

The graphics follow that old tradition when applied to a 'virtual' world... yep it's Victor Graphics and his mate Ray Tracing again, but to be honest the loss of detail isn't a problem so long as everything moves fast enough ... and it does! Pretty soon you find yourself jumping at the slightest thing and being able to watch your character from all angles being slowly killed due to poor reactions.

The sound deserves a special mention as it is quite stunning. In movies nothing makes the popcorn shake more than a heightening soundtrack; you know, the door is about to open, the strings build, the door creaks open, the soundtrack hits a peak, and so do you. All this is included – get near a possible danger and up goes the music, face a foe and you do so to the full orchestra. Brilliant!

So at last a true classic; just as *Wolfenstien* caused a stir on the Acorn market so should this. If you are at the show head for Krisalis, *demand* your copy and say that *Acorn User* sent you; you will thank me for it.

Steve Atherton



The top-of-the-range Hornet FX: cool, sleek, and very, very expensive. You'll have to get some way through the game before you can afford one of these; mind you, it also takes a bit of driving.

HIGH RISC RACING

Supplier: Modus Software
Tel: (01236) 722202
E-mail: modus@digibankdemon.co.uk
Price: £25

This game is somewhat nearer completion than *Alone in the Dark* – in fact, it should be available by the time you read this. A demo version is already available – Modus Software will supply one in return for a 3.5in disc and an SAE – and the full game has been written.

A full review will have to wait until next issue, but *High Risc Racing* is certainly a worthy addition to that most exclusive of clubs – games originating on the Acorn. While not quite in the *Elite*, *Revs* or *Zarch* class of ground-breaking software, it can at least sit in the same room as *StarFighter 3000*.

The scenario is quite simple; you have a car in which you race. If you do well, you get money; when you have enough, you can buy a faster car and improve your chances. Of course, your car deteriorates under race conditions, and you'll need to spend money to keep it roadworthy.

This is one game where the off-track decisions are harder than the on-track ones, although the gameplay is by no means easy (you start from the back of the pack, for a start).

A special mention for the music and sound effects, which are excellent and really add to the atmosphere of the game. The title graphics are well-executed, too.

David Matthewman

Skidding round corners may sound great, but it doesn't half wear your tires out. *High Risc Racing* offers an overhead view of the race track, rather than the more traditional 'driver's seat' view. This loses you a little of the atmosphere of actually being in a car, but that doesn't matter because you soon forget anything except staying on the road and getting round ahead of the others.

As you improve, you get the hang of bashing them out of the way – who said anything about a fair race? Hill and Schumaker have nothing on this game; you even get missiles. Let's see them introduce *those* at Silverstone.



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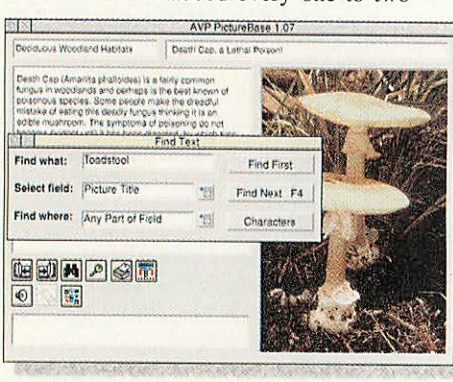


CD-ROM

Firstly, welcome back to Media Design Interactive who has announced it will resume producing discs for the Acorn platform. MDI produced four Acorn titles a while ago, but then left the Acorn market to concentrate on the more lucrative Mac and MPC markets. The cream of its previous offerings was undoubtedly *The Dictionary of the Living World* which was hugely popular in both primary and secondary schools. Let's hope we see some more like that one.

PictureBase by AVP

Probably the largest collection or set of CD-ROMs is the *PictureBase* series from AVP. There are currently ten CD-ROMs with a new one added every one to two



Standard format *Picturebase* discs are excellent for older students.

months. These differ from many other CD-ROMs in that the data is controlled by a separate application called *PicBase* which is supplied with the CD-ROM and must first be installed on a hard disc. *PicBase* is then loaded from hard disc and will handle any of the data it knows about, and the information is read from the CD-ROM as required. Each time a new *PictureBase* is purchased it must be installed and the data becomes part of the whole resource.

The user can search for the data he or she requires, and if the CD-ROM containing the requested data is not present a prompt will be given to make it available. All the *PictureBase* files have a common feel about them and once you've mastered one product, moving to another requires no additional learning. A particularly interesting feature is the 'Picture Trail' which enables screens to be connected from any of the *Picture Bases* currently installed. This facility, together with the notepad in which prompts and questions can be added, enables the teacher to quickly tailor the resource for a specific lesson or allows students to collect evidence of their research and create their own mini-multimedia presentation.

World Habitats and *UK Habitats* are the latest additions to the series and are effectively compilations of disc-based *PictureBase* files. All the individual modules can be purchased separately, but the CD-ROM version is significantly cheaper as there are up to 20 modules per disc. These are encyclopaedia-type files which give information about the habitats of plants and animals. Each record has an explanation of the habitat with an accompanying picture. As with all *PictureBase* discs, the pictures are high quality and the text easy to read. A particularly pleasing feature is that the large versions of pictures are not computer enlargements but larger pictures. If required, the text can be spoken by the computer. These discs also contain video sequences and a number of useful diagrams.

As with all good CD-ROMs, the pictures and text can be extracted and included in a DTP document. Links are also available so the user can string together various records to demonstrate their searches, while the facility to add prompts, questions and further information enables the teacher to create study modules for specific topics.

PictureBase CD-ROMs are priced between £75 and £99 for single user and £150 and £199 for site licence. This product is networkable, although the *PicBase* application must be installed in the read/write area as users are invited to add notes to the database.

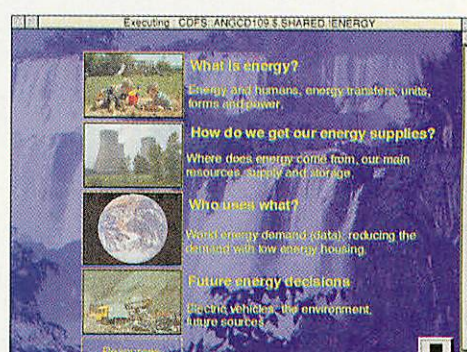
Decades by Longman Logotron

Unlike AVP's *PictureBase*, Longman Logotron's *Photobase* CD-ROMs are specific collections of photos tied together in a database to allow for easy searching. *Decades* is a series of six discs each holding about 2500 photos from the Hulton Deutsch collection. Each picture is accompanied by a small amount of text by way of explanation and to aid searching. The decades in question are 1920s, 1930s, 1940s, 1950s, 1960s and the Victorians. The pictures are exceedingly good quality and will be invaluable to students in secondary schools. Searching for a picture is easy: with the 1960s disc loaded I typed in 'Beatles', and within a few seconds a list of 25 pictures appeared. These can be viewed individually, exported as a sprite file, or placed into the *Photobase* filmstrip and automatically viewed in sequence.

At £49 per disc this is not a cheap resource and I'm bound to say I am slightly uneasy about lots of sprites of this size flying about the network. My advice here is to place these discs on a networked computer with a local CD-ROM drive, preferably located in the Library or Learning Resource Centre. If an individual wishes to locate a picture, she or he can then log onto the computer, search for the picture they require, and save it into their user area.

Understanding Energy by Anglia

Several of Anglia's CD-ROMs contain only data for its *KeyPlus* database; however, many of Anglia's discs are self-contained and do not require an additional data handling program. *Understanding Energy* looks set to be as



***Understanding Energy* is another topical disc which covers everything about energy and its costs.**

Round up No 3

Geoff Preston looks at the latest CD-ROMs as well as looking forward to some new ones.

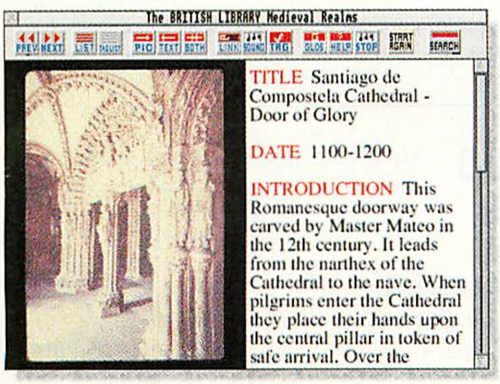
popular as *Castles* which, incidentally, has been improved and is now version 2. *Understanding Energy* covers everything from energy production to environmental issues clearly and concisely.

The opening screen asks the user to choose between 'What is energy?', 'How do we get our energy supplies?', 'Who uses what?' and 'Future energy decisions'. Each takes the user through a variety of clear, well-presented screens outlining the issues related to each. There are some excellent diagrams as well as clear photos and video sequences which can be extracted for use in other presentations. Hyperlinks are provided to link the different sections enabling students to discover all the implications of the production and use of different sources of energy. Also included are some activity sheets in *Draw* format which can be printed and used to guide the student around specific areas.

This disc, costing £50 (site licence £150), will be invaluable in Key Stage 3 Technology and Science in particular, but also in Humanities.

Medieval Realms by The British Library

History teachers will hardly need reminding that Medieval Realms is one of the Key Stage 3 History topics and this disc from The British Library contains everything you could possibly wish to know about the period from 1066 to 1500. It's essentially a large database containing almost 1500 records, about half of which have a picture. Searching is easy and can be based on topic, date, event, artefact or evidence. The manual includes some excellent investigations for children to work through which requires them to search the database, and precise instructions are included on each investigation card.



Relevant, good quality pictures and clear text are the hallmarks of *Medieval Realms*.

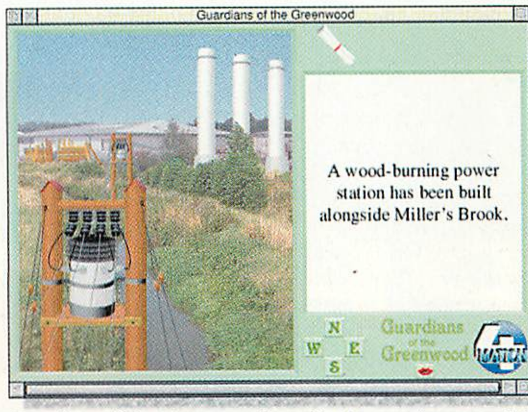
As soon as I opened the pack I immediately felt that this was put together by experts – expert historians and expert software producers. When I installed the disc, I wasn't disappointed. *Medieval Realms* also runs very well over a network. The single user price is £150 and a site licence is an extra £75 per site.

Guardians of the Greenwood by 4Mation

In my opinion this is easily the best of this bunch of CD-ROMs. 4Mation has produced yet another stunning piece of software which should be in every primary and secondary school. Mike Matson's eco-fantasy uses a combination of computer-generated animations mixed with digitised photographs. The computer graphics are perfectly scaled and appear to be part of the landscape rather than something drawn over a background.

There are also over 30,000 words of digitised speech so that everything you see written can also be heard. Because this is digitised speech, it is very clear, although the computer would benefit from a pair of active speakers.

The storyline sees the heroine, Crinkle, attempting to save the Greenwood Forest from destruction by industrial developers, Hawk Enterprises. Although set in a fantasy land, this program highlights many of the threats to the real environment including air and water pollution, destruction of habitats and deforestation. Also included is a dictionary of over 500 of the more difficult words used in the story. When a word is chosen it is spoken, then a definition is shown, and finally an example is given of how the word is used in the story. I would like to see a larger stand-alone dictionary on CD-ROM just like this produced for schools.



***Guardians of the Greenwood* is not just computer-generated pictures on a digitised background. Look at the way the chimneys are in front of the building, but behind the trees; very clever.**

Guardians – costing £49.50 + VAT with a site licence costing a further £49.50 and additional discs available for 17.50 each – was a very ambitious project and was a long time in coming. It was worth waiting for. Congratulations Mike, you've surpassed yourself! AU

Contact details

4Mation
(01271) 25353

Anglia
(01268) 755811

AVP
(01291) 625439

The British Library
0171-412 7768

Longman Logotron
(01223) 425558

Media Design Interactive
(01252) 737630



Meaty software

Geoff Preston gets his teeth into a new program from an unlikely source with an even more unlikely price tag.

British Meat has diversified and entered the software arena with *The Fast Food Diner*. *FFD* (as I will now refer to it) is a *Genesis* application produced by two teachers and aimed at Key Stages 3 and 4.

The pack is supplied in a sturdy A4 wallet with an A5 manual, software 'route' map, three discs, three double-sided glossy information sheets and seven double-sided glossy worksheets. Quite a pack – but wait until you see how much it costs.

The pack is based on the story of a team of four teenagers (Danny, Mandy, Steffi and Tim) and follows their progress in setting up their own fast-food business from the original through to the grand opening of *The Fast Food Diner*. Disc one holds the *Genesis Browser* and *GenLib* applications, and Disc two contains the main part of the pack – the multimedia file about setting up a fast food business. At present this will only run on RISC OS 3.1 (not RISC OS 3.5/6 or 2).

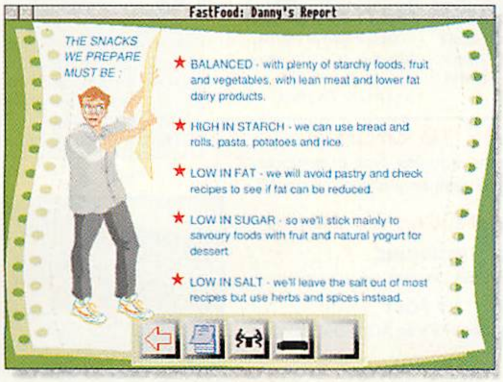
The application opens with a title page followed by a list of conventions used throughout the software. The user is given the opportunity to listen in on meetings between the four and get first hand details of decisions made. A fact file about each of the four is available to help students decide if the chemistry of the team is such that this could be a viable venture. There are also several tasks intended to make students aware of such issues as unseen costs and overheads, as well as the more obvious nutritional requirements and food hygiene regulations.

There are many clever features in the software but of special note is the Nutrition Database which can be found within the application. There is a worksheet explaining how to use it and some questions to answer by using the search facility.

The quality of the software is very good. I've lost count of the number of applications I've been asked to review which were produced with *Genesis* and the like. Most of them looked like they were produced with very little thought or planning and appeared decidedly amateurish. *FFD* has clearly been carefully planned and very well executed, although a little more time spent on some of the graphics would be beneficial, even if only from an aesthetic stand point. But that is being really too critical – especially when considering the price – as the displays are quite clear.

The third disc contains a variety of nutrition graphs, clip art and text data which students will find invaluable when writing up their notes using a DTP package.

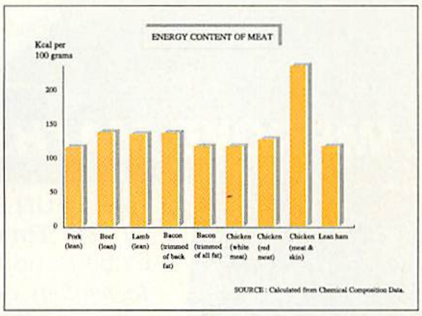
The information sheets and worksheets are also of much higher quality than one would normally expect from software of this type. Not only is the content relevant, but the material is displayed in a clear, lively and accessible manner. Issues covered include calculating recipe costs, market research tips, dietary guidelines and food tasting.



The pages are well-designed and convey the message.

Who will use it?

Food Technology departments should be ordering a copy as soon as they put this magazine down. Apart from Food Technology, *FFD* will be used in other curriculum areas including Technology and Business Studies. There are several projects possible for Year 8 and 9 students and lesson development could encompass further subject areas. Year 10 students could gain a great deal from the business aspect and this material could form the inspiration for technology projects in Year 11. Although primarily aimed at Key Stages 3 and 4, the pack also looks a good starting point for GNVQ Elementary (and possibly Intermediate) Leisure and Tourism and Business Modules.



Several comparison graphs are on Disc 3. This one shows the amount of energy from various meats.

So, how much?

In these days of high inflation and tightening budgets, it's refreshing to announce that *FFD* is free to schools – simply phone in and order a copy. But don't let the price put you off. When something is free it's very often because it's worth what you pay for it, but this is definitely not the case with *FFD*. This is a very well-produced program and why they're giving it away, I can't imagine.

Individuals (i.e. not schools) who are interested in this product should contact Shirley Ascough on the same number and she will be pleased to make arrangements for getting a copy to you. AU

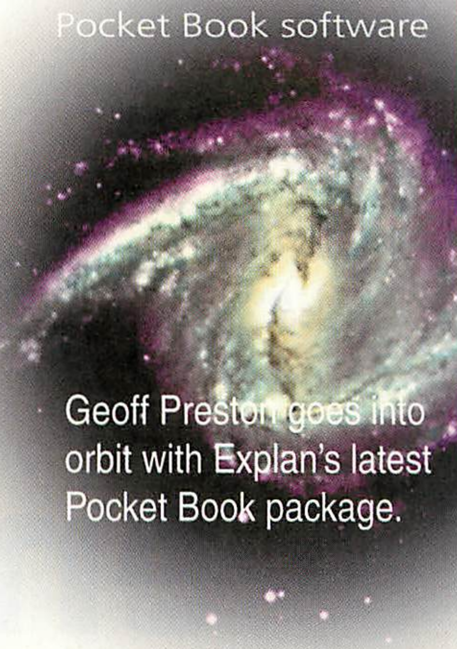
Product details

Product: The Fast Food Diner
Supplier: British Meat
Tel: (01908) 677577
Price: Free

Pros: Stimulating material • Professional look • Free

Cons: Graphics not always perfect, but at this price who can complain? • RISC OS 3.1 only

Pocket Book software



Rocket assisted

Geoff Preston goes into orbit with Explan's latest Pocket Book package.

Although spreadsheets are an important part of the National Curriculum, they do little for me other than cure the occasional bout of insomnia. ExpLAN's *Rocket for your Pocket Book* demonstrates a real use for spreadsheets and will provide a good deal of valuable work for Information Technology as well as other NC subjects. The pack contains a disc, a manual and a rocket kit carrying the warning 'Do not launch within five miles of a major airport and watch out for low flying aircraft'!

The model, which is by the American company Estes, requires a rocket engine and launch pad to send the rocket soaring into the stratosphere. It's fairly easily assembled, requiring little more than some glue and a sharp knife, but I'm bound to say the instructions make assembly appear to be more complicated than it actually is. But, for safety's sake, it's best to read them thoroughly. The kit is assembled around a 300mm x 18mm cardboard tube onto or into which are fitted the solid fuel rocket motor, tail fins, nose cone and parachute. When built, it can be painted and decals (which are supplied) added. Indeed, painting with 'dayglo' colours seems to me to be a minimum requirement if you want any chance of ever being able to find it again. The assembly part of the pack would make an excellent technology project and presumably – once the principles have been established – students could design, make and then fly their own models.

The software, (which is basically two spreadsheet files) is supplied on a DOS disc and should be copied into a suitable directory on a RISC OS machine before being downloaded into the Pocket Book via the A-Link. Full instructions are provided as well as details about using the software and ideas about further development.

The file called *Height* is for recording the height attained by the rocket. This figure will be largely determined by the power of the engine and the mass (the combined total of the rocket, the engine, on-board recovery equipment and the payload). The various engines have different characteristics and predictions can be made about the height, given the particular engine being used and the mass. The software manual includes details of ten different engines suitable for this model.

The file *Rocket* is used to record the mass, engine characteristics and height achieved to deduce data for plotting payload mass against height for given engines and rockets. The Pocket Book 2 has an inbuilt graph plotting program, but users of the Pocket Book 1 will have to purchase the graph plotting software separately.

Safety is, of course, of paramount importance and this is mentioned several times in the documentation for both the hardware and software, and a Code of Conduct is also included on the disc as a text file. The teacher will need to have the launchings organised very carefully indeed. I feel there should ideally be two adults with a class of no more than 15 sensible teenagers. I'll leave it to the reader to adjust the numbers in light of the words 'sensible' and 'teenagers.' Staff should also be aware of the fact that in the UK it is illegal to launch a rocket with a total mass greater than 1.5kg, nor should one be launched within 5km of an airport. I feel I should also advise staff contemplating this activity to inform their headteacher of your intentions and to refrain from launching near the Head's office.

This really is a super project which I envisage appealing to students in all Key Stages. Teachers could easily tailor the material to suit Key Stage 2, 3 or 4 and encompass several Science attainment targets, Mathematics targets and possibly some CDT. Unlike some other projects of this type, the Information Technology element is strong and shows the real benefits of computer modelling to forecast results. In fact, this project just begs to be delivered as a joint effort between the Science, Maths, CDT and IT departments; great stuff!



What it costs

The software alone is £12 + VAT for a full site licence. There are a variety of rocket kits available from a simple one for less than £5, up to one which carries a camera. For £23.82 you will get a large rocket including the launch pad and a further £49 will get you an additional five rockets. Rocket engines are priced depending on power and start at £3.62 for three. Apart from an Acorn RISC computer, a Pocket Book and an A-Link, you will also require some means of calculating height – a protractor-type sighting device is suggested. Oh yes, a long-range telescope will also be useful! AU

Product details

Product: Rocket for your Pocket Book
Supplier: ExpLAN
Tel: (01822) 613868
Fax: (01822) 610868
Cost: £12 + VAT for software (rockets extra).

Pros: Practical use for spreadsheet • Good use of Pocket Book • Motivation probably not an issue (fun!)

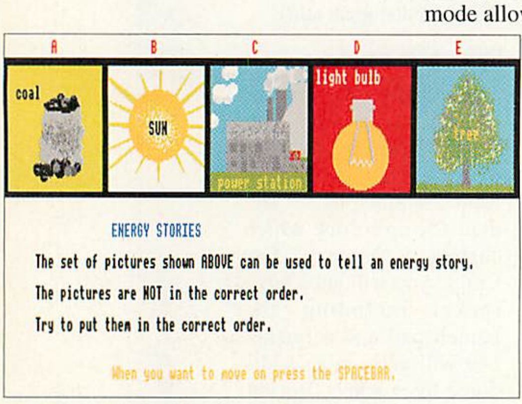
Cons: Need to choose the launch site very carefully • Too many lost rockets could prove expensive

Getting energetic

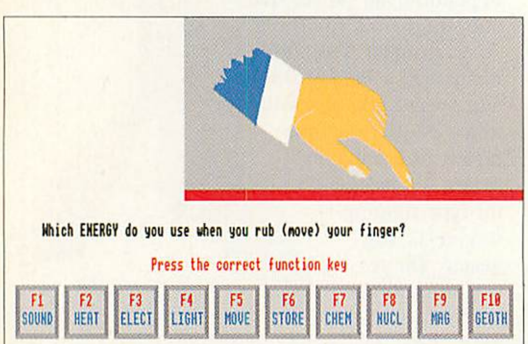
Joanna Allen looks at a program to help with science teaching.

Product details

Product: Energy
Supplier: Occam
Tel: (01655) 750368
Price: £29 (£98 for a site licence)
Pros: Encouraging messages • Section on energy stories
Cons: 'Good' messages still occur even if the correct answer key is the last one you try • Repetitive style can become boring



Energy Stories is by far the best section of the program.



Multiple choice questions feature heavily.

This program starts in a friendly manner asking for your name, which allows future comments on your performance to be personalised. There follows two pages of information titled 'Energy is what makes things happen', containing statements like 'Sound: energy a radio gives out.' Students are asked to copy these two pages into their notebooks which seems rather a waste of time to me, especially as these two pages are almost identical to the summary sheet provided. The program is in the form of a multiple choice test which is a disappointing style for 1995. Ten years ago it had its place, but I am not so sure of its value today.

The program can be accessed in two ways: either running straight through in main mode, or the revision mode. The main mode takes you through all the sections in order and the revision mode allows to choose from a menu.

There are 11 areas of study; the first entitled 'What is Energy?'. You are asked to perform a task such as rubbing your finger on a desk. Questions on the activity then follow the nature of 'When I rub my finger on the desk, movement energy is changed into .... energy'. To answer the question you have to select the appropriate function key; the ten different types of energy available are assigned to the function keys F1 to F10 – for instance F1 for sound energy, F2 for heat energy and so on.

If the question is answered correctly, an encouraging remark appears on the screen. If the answer is wrong a beeping sound occurs; when the correct function is eventually hit, the same encouraging message appears. These messages get progressively more encouraging, regardless of how many attempts you have. Even if it takes all ten keys to give the correct answer, you are given the message 'Another correct answer'.

The other sections are:

Energy Changers – here you can either follow a simple experiment on the screen or you can collect the equipment and try it for yourself. Questions such as 'What kind of energy is in the battery?' follow.

Energy Input and Output – the program looks at a device such as a gas fire and asks what the type of energy is taken in and what sort of energy comes out.

Power Stations – the moving graphic of a boiler connected to a dynamo and lamp goes on for far too long. You are eventually asked 'Which form of energy has the fuel used in the burner?'

Energy in Food – this is to do with burning foods on a Bunsen burner. Students are asked to copy a table, carry out the experiment, and record the results in the table. The question 'Did all the foods give out heat energy when burned?' followed.

Fossil Fuels – refers to a text book, then asks 'Where do oil and gas come from?'

Renewable Energy – here the language gets a little confusing, asking if something is not a non-renewable source.

Energy Stories – the student is asked to put a sequence of pictures in order and to sort out the energy chain for a variety of situations.

Energy and People and **Saving Energy** – are mainly reading and table filling exercises.

Sources – several pages of examples are given followed by the question 'What kind of energy comes from the battery charger?'

The menu lists these sections numerically, but annoyingly, when the section actually appears it is titled with a letter. This is just a small detail, but to me implies sloppiness in the production.

Energy Stories is by far the best section. There are some moving graphics throughout the program which tend to run for rather a long time – there is only so long you can watch water falling from an open tap.

At various points throughout the program, you are asked to go away and read the relevant section in a text book. However, no reference to this is made of this when the questions are asked. It is disappointing to see the wording 'energy changes' when the National Curriculum for Science always talks about 'energy transfers'. Again this is a small detail but I feel an important one. AU

FEATURE

Eye catching

In the first in a series on design, Pete Worrall shows how your Archimedes can be used as a graphic design workstation.

During the next few months I will be exploring the many exciting ways in which Acorn computers can be used for creative design, kicking off with graphic design. Most of us, at some point, use a computer to produce an eye-catching document containing information and aimed at a specific audience. This might take the form of a poster, party invitation, business card or letterhead to name but a few. It is always the case that the effective use of letters, words and pictures will have that elusive 'readability' factor.

So how do Acorn graphic designers create that bigger splash with everlasting impact? Read on.

Design with Draw

Draw – supplied with every Acorn computer – is a powerful text and illustration design package and most tricks of the trade can be learnt through its use. The advantage of using *Draw* is that individual elements within a design (text, letters and pictures) can be moved, rotated, recoloured and scaled independently of each other.

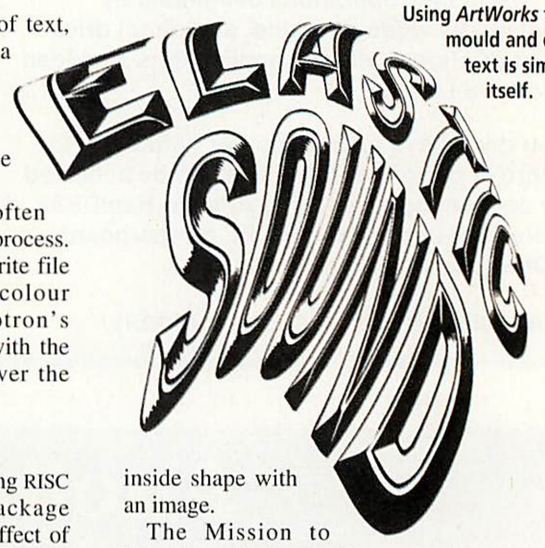
Text is typed on screen by selecting the 'T' icon which activates a red cursor. The default font is System, which can be changed by moving to the Style submenu and choosing a different font and size.

Try this with the page zoomed at 1:2 and font size set at 80pt. If you make a spelling mistake, the Select submenu has a useful, often forgotten 'Edit' option, at least on the RISC OS 3 version of *Draw*.

Creating posters

Draw is great for posters. The main headline in a poster should stand out from the rest of the information – one way to do this is by creating a text shadow. Select and copy an original line of text, then select a different colour for a drop shadow. In the classic design poster shown here, the font is Trinity and the copy has been coloured black and moved to the left of and behind the original.

The text/image relationship often plays a crucial part in the design process. In the poster I have imported a sprite file into *Draw* which has been colour processed in Longman Logotron's *Revelation Image Pro*. The text with the drop shadow has been placed over the image to good effect.



Using *ArtWorks* to mould and distort text is simplicity itself.

Logos with Draw

Converting text to a path (either using RISC OS 3 *Draw* or the Freeware package *DrawPlus* on RISC OS 2) has the effect of separating or ungrouping individual letters for moving, rotating and scaling. It also allows the application of outline and transparent fills, so you can overlay text through an image. It is also well worth experimenting with interpolation and grading after conversion to path for the more bizarre effects. Finally, don't forget that you can also save outline text and export it into an art package so that you can flood-fill the inside shape with an image.

The Mission to Mars logo (bottom left) shows the use of text converted to a path, and also shows two alternative designs of the same logo. Trying out different designs is the bit I find really interesting, and it's great fun to do. The bottom line is usually 'Does it look good in print and can you still read it when it is reduced in size?' Finally, remember that your logo or letterhead can be exported into your



Two designs for the space mission badge, done using *FontFX* and *Draw*.

Getting started

Fonts – font styles or letter faces are the real nuts and bolts that hold together your document. They all have different names and some look bold and aggressive while others are light and cheerful. Most of us discover our top ten favourite fonts and use them to suit our own design needs, but it's always a good idea to check out people like the Electronic Font Foundry, The Font Company or Skyfall for extra or unusual fonts to add to your collection; some people say you can never have too many fonts.

Clip Art – if you're not artistically inclined, there are good image libraries available, all reasonably priced in CD-ROM and floppy disc format. Matt Black's collection is probably the pick of the bunch, but there are lots to choose from.

Printers – access to a printer is essential so you can print out different design ideas and all those different fonts. The display on the Archimedes is very good, but designs can still look rather different on paper.

Magazine library – a collection of magazines and newspapers is useful for source material and ideas.

Brief – set yourself a practical design brief, preferably one you can try out with a real audience.

Copying – access to a photocopier is essential for producing multiple copies of your work, if you don't want your printer to burn out.



classic design graphics

favourite DTP package for further additions.

Text Effect Software

Let's now have a look at specific graphics software designed to twist your words into more complex shapes.

FontFX: *FontFX* (£10 from The Datastore) will position lettering in different positions including arcs, circles, jiggles, ripples and columns. It is particularly useful for badge design. The *FontFX* control panel allows a string of text to be typed into a dialogue box and then gives you a set choice of text options including size, colour, shape and shadow. Click on the Create button and the software does the rest.

Year 8 pupils at Willingworth High School were given a Space mission badge design, and they came up with some excellent results. To begin with they experimented with different settings on the *FontFX* control panel. The designs were then saved as a *Draw* file and exported into *Draw* for those final touches. To complete the assignment the work was printed out on a colour printer, glued onto pieces of thin card, cut out and worn by a proud set of pupils (and very professional they looked too).

ShapeFX: If you require a decorative border that will seriously enhance a party invitation or poster, look no further than *ShapeFX* (£10 from The Datastore). Options include number of repeats, border shape (rectangle, square or ellipse), frame height and width and gap size between shapes.

TypeStudio: For a mid-price text effects package that will squeeze or stretch a string of text in a whole range of different ways, look no further than *TypeStudio* (£38 from Beebug). It is supplied with an excellent guide book containing some first class ideas and has good examples of results included for use on the supplied discs. The main work window and menu structure are similar to *Draw*. Available options include 3D effects, floor and wall shadows, mirror effects, distortions and moulded text. One particularly interesting feature is the 'text flowing along paths' function. Just draw a curved line, select a path, type in a string of text and click on OK; the text will follow the curve of the line.

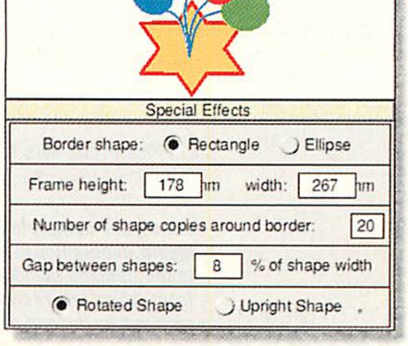
ArtWorks: *ArtWorks* (£169 + VAT from Computer Concepts) is a graphics illustration package which takes its place at the top end of the market as the professionals' choice. It is also supplied with loads of goodies including 200 extra fonts and a clip art portfolio containing 703 *ArtWorks* pics plus loads of sprite, TIFF and *Draw* files. It is also available on CD-ROM.

This well-documented drawing package has lots to offer, but what about text manipulation? Quite simply, it's brilliant. The amazing perspective and fit to envelope tools reach parts other software can't. In other words, you just type in your text, choose the envelope or perspective tools and an elastic box appears which will morph your words in different ways on screen as you stretch the box. Colour gradations and radial fills can also be applied to the text. Designs can be exported as *Illustrator 88*, *3.0*, *Corel Draw 2.0/3.0* and *ArtWorks* EPS file formats, plus the all-important Acorn *Draw* file. Many features in *ArtWorks* are similar to those in *Draw*, but it has far greater overall capabilities.

It is important to remember that all Acorn users can achieve excellent design results just by starting with *Draw*. One interesting eye-catching text effect in a document is probably all you need to attract the right attention. So, if you've designed some eccentric, wacky or weird text and image effects of your own, please send them in, telling us how you achieved your result and we will endeavour to print the most unusual ideas. As they say, the medium is the message. AU



I designed a star and four party balloons in *Draw* and exported it into a *ShapeFX* window, although there is also a small library of images included with *ShapeFX* for you to try out. This was then used to create a border for the *Acorn User* party invite, which was then exported into *Revelation Image Pro 24* so that I could visualise it in greyscale before printing on a monochrome printer. I chose my fonts carefully to convey a particular mood, here using the casual Rigmarole and more formal Acme fonts which supplied with Computer Concepts *ArtWorks*.



Contact details

Beebug
Tel: (01727) 840303
Fax: (01727) 860263
E-mail: sales@beebug.demon.co.uk

Longman Logotron
Tel: (01223) 425558
Fax: (01223) 425349

Matt Black
Tel: (01733) 315439

Skyfall PD
Tel: 0121-358 7078
Fax: 0121-358 5969
E-mail: skyfall@zenta.demon.co.uk

The Datafile
Tel/fax: (01934) 823005

The Datastore
Tel: 0181-460 8991
Fax: 0181-313 0400
E-mail: sales@datastore.demon.co.uk

The Electronic Font Foundry
Tel: (01344) 891355
Fax: (01344) 891366
E-mail: info@efffonts.demon.co.uk

Exclusive proTeus deal

Cheap storage



The Cumana proTeus drive (reviewed opposite) gives you a combined high-speed CD-ROM drive and unlimited storage system in one box. Acorn User has teamed up with Cumana to give its readers this exclusive offer.

If you are considering buying one of Cumana's revolutionary proTeus drives for your machine, then this offer is for you. For the normal RRP of a proTeus you also get:

- a re-writable optical cartridge worth £39 + VAT
- a copy of PaperOut – Cumana's software to read Electronic Books – worth £49 + VAT
- a copy of SpeedyCD, Cumana's software to improve the performance of the CD-ROM drive worth £17.50 + VAT

all completely free. That's over £120 worth (including VAT) of extra software and hardware. If ordered with a SCSI interface Audio and Photo CD player software is also provided.

Even better, if you are coming to the Acorn World show you can buy a proTeus there through this offer and save on any delivery charge (£10 + VAT within the UK). Simply fill in the form below and hand it in at Cumana's stand.

Please note that the recommended minimum specification for a proTeus drive is 4Mb RAM, RISC OS 3.1 and a hard drive. You will also need a SCSI card – you can order one with the proTeus if you don't already have one; note that an A30x0 or A4000 series will need the SCSI card to be fitted to the internal expansion slot, so this slot will have to be free. With these limitations in mind, a proTeus may be used with any Acorn RISC OS computer except the A4.

Re-writable optical cartridge

This disc is based on optical phase-change technology and offers a full 650Mb of re-writable storage. It is stored in a robust plastic case to avoid damage and may easily be filed away when not in use.

To the Desktop, this appears just like a normal SCSI hard disc, and may be partitioned and formatted in the same way. One disc is supplied free with any proTeus sold through this offer.

Speedy CD software

Even a quad-speed CD-ROM like proTeus is slow in comparison to most hard discs. *SpeedyCD* improves matters by using cacheing techniques to look ahead and anticipate the user's requests, improving the apparent responsiveness of the drive.

SpeedyCD is supplied free with this offer.

PaperOut

This software, free with the offer, allows Electronic Books (EBs) to be used in a normal CD-ROM drive such as the proTeus. EBs are small 8cm discs developed by Sony for use with the Sony Data Discman. Over 130 titles are available (a catalogue is supplied with the software) including the *Hutchinson Guide to the World*, the *Chambers Science and Technology Library* and *The Concise Oxford Dictionary and Thesaurus*.

Order Form

I would like to order:

...proTeus internal drive(s) for a Risc PC	£549 + VAT each
...proTeus external drive(s) for an Acorn RISC OS computer	£649 + VAT each
...proTeus internal drive(s) for a Risc PC with a SCSI II card	£699 + VAT each
...proTeus external drive(s) for an Acorn RISC OS computer with a SCSI card & cable	£699 + VAT each
...proTeus external drive(s) for a Risc PC with a SCSI II card & cable	£799 + VAT each

Please add £10 + VAT to cover postage within the UK. For orders outside the UK, please ask Cumana ((01483) 503121) for postage rates. No postage is payable on orders placed in person at the Acorn World show.

I enclose a total payment of:______________________

I wish to pay by:

☐ Cheque/Postal order (made payable to Cumana Ltd)

☐ Credit card (VISA/Access/Barclaycard)

Expiry date: ____ / ____

Card no: ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

(Official orders from UK educational establishments are welcome – contact Cumana for details.)

My computer is a:..

Name:..

Address:..

....Postcode:....................

Daytime phone number:..

☐ Please tick here if you do not wish to receive promotional material from other companies.

Send your completed order form to: Acorn User proTeus offer, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or take it to the Cumana stand at Acorn World. Please allow 28 days for delivery from when we receive your order. To qualify, all orders must be received by the end of December. E&OE.

REVIEW

Best of both worlds

The Cumana ProTeus drive combines a fast CD-ROM with a writable optical drive to great effect, as David Matthewman found out.

Here's a neat idea: CD-ROM and optical drive technology are similar, and a 5.25in optical disc is roughly the same size as a CD-ROM, so why not combine the two in one drive? That's just what Panasonic has done with the proTeus drive, marketed on the Acorn platform by Cumana.

The proTeus comes in either an external version with its own power supply or – for the Risc PC – an internal version which sits in one of the 5.25in bays. Fitting the Risc PC version is simple, with mounting screws and cables all supplied. The proTeus is a SCSI device, so you'll need a card if you don't already have one. For this review I used a Cumana SCSI 2 card, with which it (understandably) performed perfectly.

The CD-ROM drive is a quad-speed device, with a comfortably fast transfer rate of 600Kps. The drive is compatible with Photo CD and both Green and White Book Video CD – the standard range in other words (it also has the Cumana standard open/close button under the tray where you can't get to it, but that's life). The internal drive on the Risc PC can have its audio output connected to the infamous LK14 on the Risc PC mother board to allow audio from the CD-ROM to be played back through the internal speaker on the Risc PC.

However, viewed solely as a quad-speed CD-ROM drive, the ProTeus is very pricey. The extra value is accounted for by the proTeus's ability to read and write re-writable optical cartridges which can each store up to 650Mb of data. These cartridges are very cost-effective at only £39 + VAT each, and this technology may well be the way forward in mass storage on all platforms.

There are a few points about these cartridges that it is important to realise. Firstly, they are *not* Write Once Read Many (WORM) discs – you can edit, move or delete the data on them as many times as you like, or even re-format the drive. Secondly, although early optical disc technology got something of a bad name for reliability, this is unwarranted these days, and the proTeus optical discs are believed to be very reliable indeed. Thirdly, the proTeus PD phase-change



Cumana's new drive fits neatly into the 5.25in bay of a Risc PC and accepts both CD-ROMs and re-writable optical discs.

discs do not store the data on the disc in the same way as Magneto-Optical (MO) discs, and the two formats are sadly not compatible.

In use, a cartridge behaves just like any other SCSI drive. It can be partitioned – this is indeed necessary on any machine without Acorn's new FileCore, as the discs hold 650Mb. Because a significant effort is required to write to an optical disc (though less is required for a phase-change disc than a MO one), the drive is slower when writing data than when reading it.

In fact, for a standard block size of 512K, data was written at 407Kps (kilobytes per second) and read at 910Kps. Therefore, the drive reads data about half as fast again as the quad-speed CD-ROM drive, but writes it at roughly two-thirds the speed. This may be a touch sluggish compared with modern fixed and even removable hard discs, but it's perfectly acceptable for most uses and in reading it certainly outpaces the old 44Mb 5.25in Syquest also sitting on my machine.

Who will buy this? To be honest, anyone running out of hard disc space should consider it. The cost of the PD optical discs is so low for their size that they are a very cost-effective way of storing data. If you already have a removable hard drive or MO drive on your system, then it wouldn't be worth replacing it with a proTeus, nor would it be worth buying a proTeus solely for the CD-ROM drive. The need to buy a SCSI card as well if you don't already have one could also put people off – it is a big investment.

That said, it is about as attractive as large capacity storage devices come, and I'll be very sorry to send our review machine back to Cumana – lots of data seems to have 'overflowed' onto it, and I've already de-fragmented my entire hard drive using it. AU

Product details

Product: ProTeus drive
Supplier: Cumana
Tel: (01483) 503121
Fax: (01483) 451371
Price: £549 + VAT (internal); £649 + VAT (external). Optical discs cost £39 each.
Pros: Quad-speed CD-ROM drive • Writable optical drive in same device • Excellent for backup or as a second slower drive
Cons: None

REVIEW

A second **contender**

With the arrival of AlSystems' card, Cumana is no longer alone in the SCSI 2 arena. Dave Lawrence finds out how the two cards compare.

The AlSystems card is a standard half width expansion card. It has two SCSI bus connectors – an internal IDC and an external high density – and I've previous explained that I personally dislike these rather flimsy connectors. For my own peace of mind, I've made a short spur cable with an amphenol connector on it to plug onto the internal connector. If you plug in an external device and leave it connected though, you will have no problems.

Due to teething problems, the card only works well under DMA control and thus it is only sensible to plug into slots 0 or 1 on a Risc PC. DMA performance can be very impressive, giving up to 30 per cent faster reads than the Cumana card (reviewed in the June issue); write speeds, however, are as much as 30 per cent down. Overall, performance is, on average, double that of a standard Acorn SCSI 1 card. The best transfer rate I managed to get was from a 2Gb DEC drive, which gave a 6Mb/s read speed. Further timing details are shown below. A new PAL and board redesign are in progress and when complete will bring non-DMA performance into line with other SCSI cards. Non-Risc PC owners would be well advised to wait for this fix.

Also under scrutiny is the installation and control software. For ease of use this gets top marks. If you are at all unsure about your SCSI discs, an express install button is provided which quickly finds all your drives and configures the card and your computer appropriately. For more advanced users, the extended installation options provide means for setting up the sizes of individual disc partitions, read and write protection, and so on. I have suggested to AlSystems that the partition sizing should be graphical rather than numeric. In the future, it will be possible to format partitions in DOS format for use by the PC card.

All windows conform to the RISC OS style – Cumana take note – and even simple things like assigning drive numbers to partitions are considerably easier than on the Cumana card. Password protection is also provided, but it is not enforced if you don't want a password. The Cumana software does, however, provide a whole raft of extra details about the drives. Most of this is irrelevant to the average user but information about the error correction is invaluable to pinpointing a dodgy hard drive. On the desktop, eight drive icons can be displayed which is obviously a boon if you are using highly-partitioned drives. However, you'll be pleased to know that the card integrates fully with RISC OS 3.6 and supports the new >512Mb FileCore. CD-ROM drivers are built-in for the standard set: Sony, Philips, Toshiba, Hitachi and Chinon – also provided are drivers for NEC (hurrah!) and Pioneer.

Despite a handful of minor criticisms (for instance non-multi-tasking verify and no interactive help) it is very hard to fault the control software of this card – it is certainly considerably better and easier to use than Cumana's, even with a recent revision. Many of my criticisms have been noted by AlSystems and are likely to be fixed in future releases.

The speed issue is swings and roundabouts; unless you actually time the transfer rates, 'fast' is 'fast' and much faster than 'slow', and therefore both are miles better than any SCSI 1 card – at least with DMA. In practice, I doubt you'll be able to distinguish between the two cards; the control software from AlSystems therefore wins it for me.

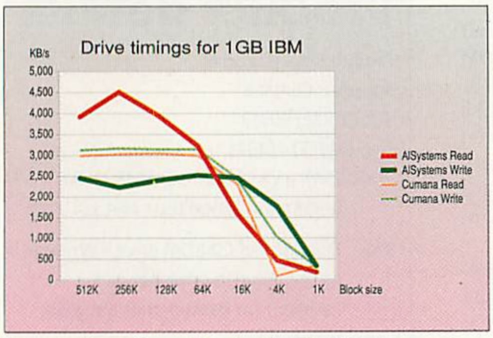
Do you need a fast drive? This is an interesting question – it is undeniable fun to have a blinding fast drive and amaze your friends with 5Mb/s+ transfer rates, but is it useful? Well, for most people probably not, really. In certain key areas a large, fast hard disc is essential, e.g. for video capture or more commonly for handling virtual memory. So if you've found yourself battling with huge 24bpp images in *Photodesk*, a super fast SCSI 2 drive could well be the answer to your problems. AU

Product details

Product: Power-tec SCSI 2
Supplier: AlSystems
Tel: (01420) 541111
Price: £169 + VAT

Pros: Faster at reading than Cumana card • On a Risc PC, much faster than SCSI 1 • Good configuration program

Cons: Slower at writing than Cumana card • Slow on pre-Risc PC machines (though this should be fixed soon)



A comparison of transfer rates for the AlSystems and Cumana SCSI 2 cards for both reading and writing different block sizes.

Timings in K/s for a 512K block

1Gb IBM drive

	Read	Write
SCSI1	1446	1331
Cumana	3011	3141
AlSys	3938	2473

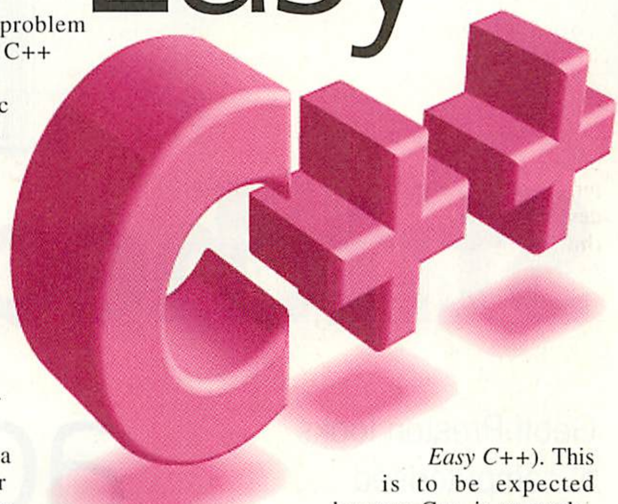
Fujitsu 230Mb MO

	Read	Write
SCSI1	968	308
Cumana	1305	404
AlSys	1665	359

REVIEW

An ambitious product from Beebug to bring a true Easy C++ compiler to the Archimedes is examined by Nick Craig-Wood.

Easy C++

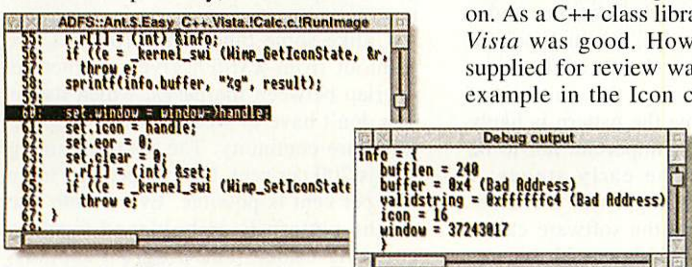


Easy C++ from Beebug is a C++ compiler based on its *Easy C* product. This review will concentrate on the new features in *Easy C++*; if you want to see a review (including speed testing) of *Easy C* then have a look in the January 1994 issue of *Acorn User*.

Easy C++ has an ambitious scope implementing C++ with some of the more contentious features such as templates and exceptions and tentative support for most of the forthcoming ISO/ANSI C++ standard (e.g. name spaces).

It installs itself on the icon bar with a multitasking front-end. *Easy C++* is a one step compiler, compiling straight from C++ source code into object code. It uses relatively little memory and would probably be usable on a 2Mb machine.

Easy C++ supports all the features of *Easy C* including throwbacks and online assembler. *Easy C++* now uses Acorn standard object and library files which is a boost to compatibility, and will mean that



The source-level debugger in action.

Easy C++ users can use pre-compiled libraries intended for the Acorn compiler.

The program comes with a full source-level debugger for C++ programs. Debugging is simply a matter of selecting the debug option and re-compiling. When you next run the program the debugger will pop up and allow you to single step, set breakpoints, examine and edit memory and variables. The debugger also features an execution profiler which can count the number of times each function was accessed and the time it took.

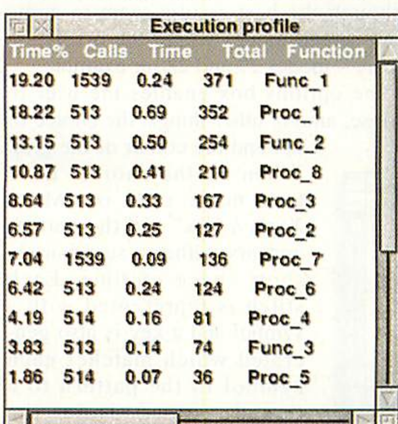
Some of the debugger windows are very small for the amount of text in them (especially using C++ where lots of fully qualified class names are needed) and are not variable in size. There are lots of debugger windows, but key short cuts for them all make things a bit easier.

Easy C++ comes with a pre-compiled version of *DeskLib* for WIMP applications, the ageing Acorn *RISC_OSLib*, a new C++ library called *Vista*, and a port of the GNU iostream library which provides the familiar cout << "Hello" syntax. Using the GNU library means that programs tend to be quite large (56K for *Hello World*) and this will continue to be a problem until we have a shared C++ library.

The *Vista* library is specific to *Easy C++* as it uses exceptions which no other RISC OS C++ compiler supports yet. It provides a neat object-oriented approach to writing Desktop programs. At the time of review the library came with 3 classes: Task, Window and Icon. These can be used as base classes to create your own specific objects.

For the review I created a small desktop calculator application with *Vista* in order to assess the usability of the C++ compiler, debugger and the library. The debugger worked well but it would have been nice to have a version of Vista compiled with debugging on. As a C++ class library, the usability of *Vista* was good. However, the version supplied for review was not finished (for example in the Icon class there was no method for writing to the text of an icon, only reading it), but if the development continues as planned it should become an excellent Desktop interface.

I pointed the compiler at some large C++ programs I have been working on, written by myself and others with varying success. Some of the programs compiled straight off, but others showed up small differences of opinion between the various compilers (Borland *Turbo C++*, Acorn *Desktop C/C++* (*CFront 3.0*) and *Easy C++*). This is to be expected because C++ is an evolving language. *Easy C++* (and *Desktop C++*) crashed when encountering some of the more bizarre syntax. The problems were easy enough to work around though, and Beebug has a 'free upgrade for bug fixes' policy.



The *Easy* C++ profiler.

There was no printed C++ specific documentation supplied for the review, although this is expected for the next major release. The product was supplied with the *Easy C* manual which contains lots of getting-going information and a tutorial. It also covers the ANSI C library and *RISC_OSLib* and has an appendix on the built-in Assembler.

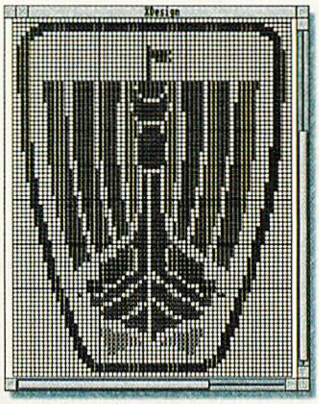
Beebug have achieved the target they set themselves, an easy-to-use C++ compiler. The compiler is simple to use and does work well, although producing slower code than the Acorn offering. More development for a perfect product is needed but Beebug's free bug-fix policy is reassuring. The price is right too. AU

Product details

Product: Easy C++
Supplier: Beebug
Tel: (01727) 840303
E-mail: sales@beebug.co.uk
Price: £99 + VAT

Pros: Compiles straight from C++ • Supports templates and exceptions • WIMP C++ library *Vista* included • Good debugger • Easy to use

Cons: Code produced is slower than with Acorn's compiler • *Vista* library not complete yet • No C++ documentation supplied yet



The program replaces the pixels with symbols which represent the stitches and the different thread colours. Note the heavier lines every tenth line.



The original sprite as captured from a *Draw* file.

Stitched up again

Geoff Preston looks at computerised needlepoint.

It never ceases to amaze me how small software houses continue to dream up new tasks for computers, set about writing software for the task, and then sell it at a ridiculously low price. *XStitch* by iSV Products is a classic case in point (if you'll excuse the pun). The wife of Aaron Timbrell, Managing Director of iSV, is very keen on the old Edwardian craft of counted needlepoint. For those unfamiliar with the term, this involves sewing small stitches (usually cross-stitches) onto a web-like cloth called 'aida'. The size and number of the holes can vary widely but typically ranges from 12hpi to 22hpi. As you can imagine, 22 holes per inch requires a very steady hand and plenty of patience. The cloth is usually placed in a frame which keeps it taught, and stitching frequently takes place under a magnifying glass, but the results can be beautiful.

Counted needlepoint begins with a pattern marked out on paper which has a grid corresponding to the holes in the aida. You count (usually in rows from one edge) and stitch the Xs in the appropriate colour and in the correct place. Needlepoint patterns are very expensive to buy. The alternative is to design your own, which can be very time consuming, so Aaron wrote *Xstitch* which produces needlepoint patterns from sprites.

XStitch installs on the icon bar and a sprite is dragged onto it, at which point a window opens giving details of the name of the sprite, the size, the number of stitches, and the time the pattern is likely to take to stitch. It's important not to be too ambitious in the early stages; I dropped in what I thought was a reasonably-sized sprite and the software calculated it would take 956 hours 24 minutes to stitch. That's only eight months at four hours per night. At that point I decided to scale down the original *Draw* file, capture it again as a sprite, and run it through *XStitch* again, which bought the stitching time down to a more realistic 20 hours.

The sprite can come from several places. I used *Paint* to capture an area of a picture produced in *Draw*. *XStitch* will also work from scanned images or photographs taken with a digital camera, although the best results seem to come from screen modes where the pixels are square – modes 27 and 28 for example.

The options box enables the user to choose, among other things, the choice of hpi and the colour of the grid. When all the choices have been made, click on 'Make *XStitch* box' and the pattern appears within a surprisingly short space of time. Each stitch is represented with a symbol and a key is also generated which matches each symbol in the pattern to a thread colour from the Anchor™ thread range by Coates. Both key and pattern can be printed from *XStitch*: the latter being tiled onto several pieces of paper if the output will be larger than the paper it is printing to.

Unlike some other tiling routines, the printout from *XStitch* gives a generous overlap between the pages, which means you don't have to glue the pages together to ensure continuity. The default printing size is 200 per cent, but 100 per cent up to 400 per cent is possible. Every tenth line on the pattern is emboldened to make counting easier. The program supports colour printing and the pattern may also be saved as a *Draw* file and the key as text.

XStitch comes with a 'free' gift of the font of symbols which can be used in a similar way to Dingbats. The characters are different and make a refreshing change if you need symbols to highlight a piece of text. The manual is supplied as an application on the disc and is about the best on-screen instruction application I've seen. AU

iSV XStitch Colours

Colour number	Colour description
1	Symbol ◐ Anchor™ 235
2	Symbol ⊕ Anchor™ 403
3	Symbol ▽ Anchor™ 131
4	Symbol ✞ Anchor™ 13
5	Symbol ☑ Anchor™ 887
6	

XStitch converts the colours of the sprite to the nearest Anchor™ colour.

Product details

Product: XStitch
Supplier: iSV Products
Tel: (01344) 55769
Price: £20 (no VAT)

Pros: Allows sprites to be converted to intricate cross-stitch patterns • Print results or export as *Draw* file • Good manual

Cons: None

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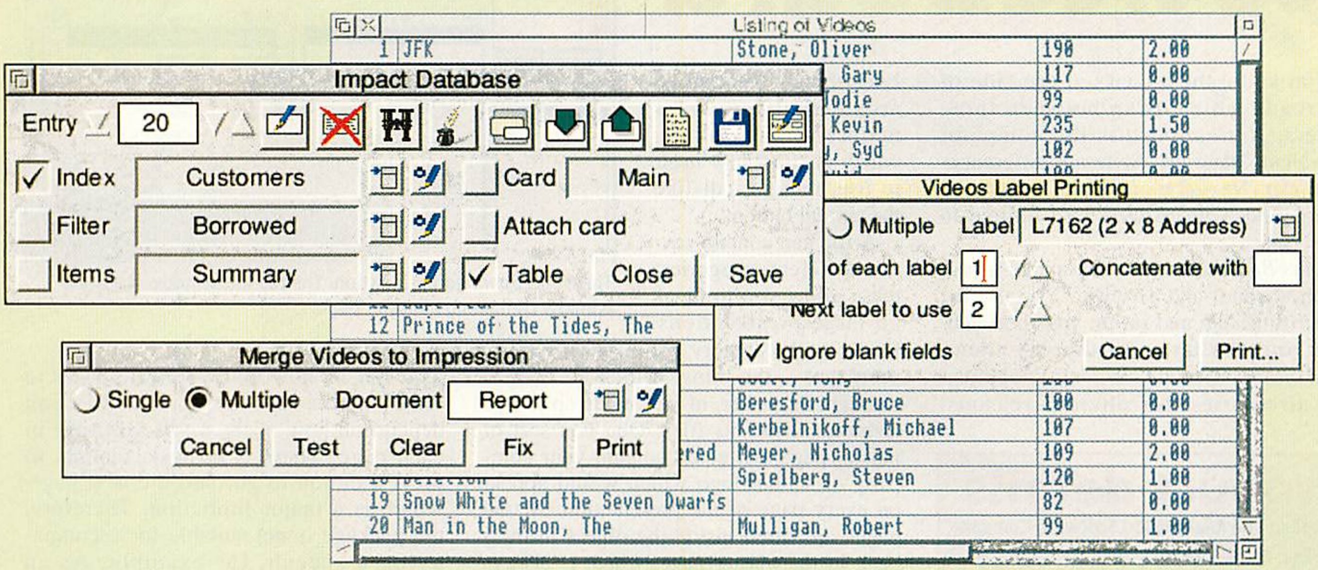
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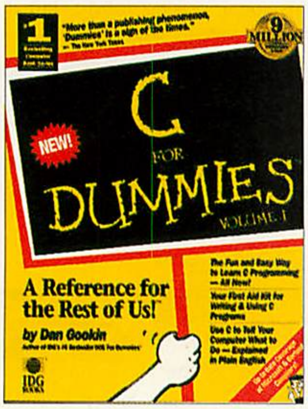
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C for Dummies

Want to learn how to program in C? Inspired by the C for Yourself articles but want to go at a slower pace? In that case, *C for Dummies* is for you. It is part of a very successful series of books from IDG Books, which you may have guessed is related to *Acorn User's* publisher.

The book teaches ANSI-standard C. In other words, it complies with the standard that everyone uses. Unfortunately, the 'English' in this book does not comply with British 'English' – the author is American. Hence we get math, disk, color, favorite and so on. Thankfully, the actual content of the 500-page book more than compensates for this; on the other hand, I wouldn't have thought a few search-and-replaces for the British market was too much to ask.



The book is divided into seven sections with chapters inside them. Each section deals with different aspects of the language from printing on the screen that someone is 'a nerd', to writing functions about 'big jerks'. As you can see, the book is written in a very entertaining way, which in my opinion is a good thing. At the end of each chapter are some multiple choice questions. Assuming you've gone though the chapter, they're child's play, intermingled with one or two 'write a little program to do this'. What's more, at the end of each main section, there are 'final exams' with 15 or so questions.

Pages are laid out with the main text explaining things simply, broken up by program listings. There are also step-by-step boxes explaining how to type in each line and what every individual command does. There are a number of cartoons with captions like 'real programmers strive to insult users with error messages'. Sounds familiar!

There *are* a few pages dedicated to DOS functions and the book suggests you pass over them if you aren't using a DOS box. Nothing to worry about, though. Of course, the proof of the pudding is in the eating. I bought this a couple of days ago and I'm now making my own header files, simple games, and generally understanding C. I'm obviously no expert yet, but this book was a great introduction. Above all, it explains things slowly and simply; it doesn't try to bundle lots of technical details together. Even if you've never programmed before, get a copy.

Alex Singleton

Product details

Supplier: IDG Books (available from bookshops: ISBN 1-878058-78-9)
Tel: 001 415 312 0650
Price: £18.99 (no VAT)

Pros: Lighthearted • In depth • Explained well • Nicely designed

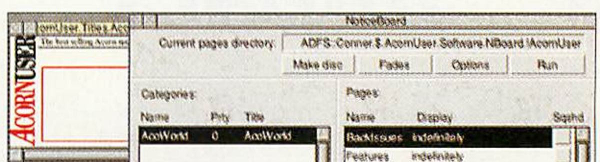
Cons: Full of Americanisms

NoticeBoard

You know the adverts at the side of roads which swap between three posters; *NoticeBoard* is the computer equivalent. Naturally, there are differences – you can't yet get monitors as big as road adverts and *NoticeBoard* isn't limited to three 'pages.'

NoticeBoard comes in two parts: a presentation editor and a viewer. You use the former to design and set up your presentations and the latter to display them. *NoticeBoard* files are, in reality, application directories, for obvious reasons.

Everything is centralised around *NoticeBoard's* main editing window, which is simplicity itself to use, though I dislike the textual buttons.



The *NoticeBoard* editor in action. The top left window is a *Draw* window containing a master page.

A file can contain several different categories; these allow you to break up large presentations. Under each category are the pages – the things which are cycled through. Pages are, in fact, made up of two *Draw* or *Artworks* files. One is a sort of master page – it could contain your company or school logo which would appear on every page of the presentation. Actual pages are fitted inside the object furthest back in the master page, which is always shown as transparent.

If you like, you can have fades between each page: the program comes with a massive selection to choose from. However, it is not possible to opt for which fades are used after each page. Instead, you select all the ones you wish to be used and the package chooses itself.

You can set how long you want pages to stay on the screen for and this can depend on how many words you have in each page. There is no way, though, to press a button to go onto the next page, which is a major limitation. Therefore, the package is not suitable for accompanying a speech, for example. As an option, you can choose a cute little timer to drop down the screen showing how long each page has left. A clock showing the time can also be displayed in any corner – useful for waiting rooms etc. In short, for rolling presentations *NoticeBoard* excels.

Alex Singleton

Product details

Supplier: The Really Good Software Company
Tel/Fax: (01582) 761395
E-mail: dturnbull@cix.compulink.co.uk
Price: £35 (no VAT)

Pros: Easy to use • Interactive help • Relatively cheap • Good selection of fades • Cute timer

Cons: Poor manual • No interaction mode

BRIEF

PicturePoint

Product details

Supplier: Longman Logotron
Tel: (01223) 425558
Fax: (01223) 425349
Price: £29 + VAT (Site licence £90 + VAT)

Pros: Easy to use • Introduces children to data handling • Good manual

Cons: None

Data Handling is a part of the National Curriculum requirements for IT and is now grouped with Communicating Information in the new orders. *PicturePoint* by Longman Logotron is a data-handling program specifically designed to introduce this topic to Key Stage 1 pupils. It allows even the very young to quickly collect information about a wide variety of subjects and then to easily analyse their results.

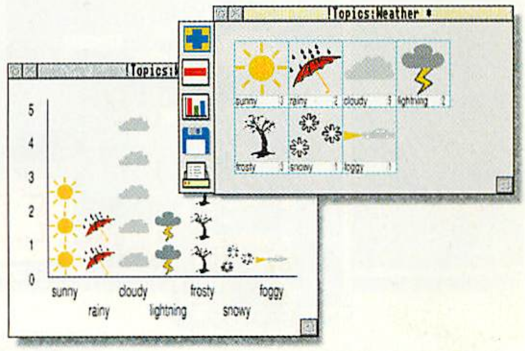
The main part of the software is a program for collecting the data (*Collector*) which will be used by the children to record information they have collected. Simply, children collect and enter numbers. In the example screenshot shown they could be asked to count the different weather conditions for a three week period or to count the different weather conditions from a number of books they have read. The numbers are entered into *Collector* and can be saved either in *PicturePoint* format or as a CSV file, which could then be loaded into, say, *PinPoint*. Once the results have been entered, *PicturePoint* can display the data in one of five different graph formats.

The program for editing and creating topics, *Designer*, is intended to be used by the teacher or parent for creating topics for children to research. Also included are nine topics which can be used as is, or edited with *Designer*.

The manual is an A4 booklet and is written in Longman's usual style – concise and clear.

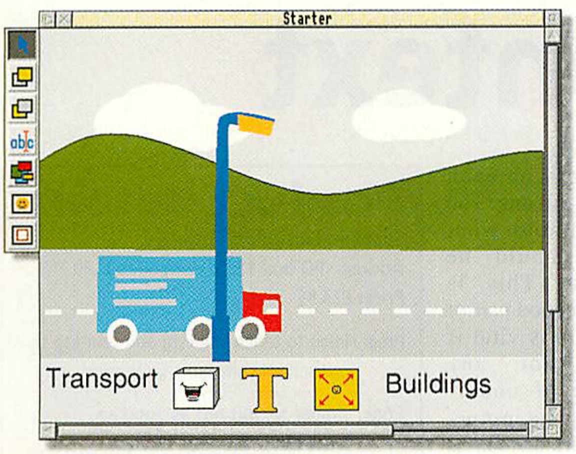
This is another quality program from Longman Logotron and is a fine introduction to data handling. Children will love it, as my five-year old twins did when I gave them a couple of tasks to complete with it. I think the trick here is to first provide the children with a pencil and paper with which to record their findings. The paper should be carefully prepared so that the children can easily record their results and then to be able to transfer their results onto the computer.

Geoff Preston



An example *PicturePoint* topic; here concerning the weather.

Rainbow



Rainbow allows multimedia presentations to be put together quickly and easily.

Rainbow is a simple multimedia program that enables parents or teachers to create exiting interactive multimedia activities for young children. It has been designed for five to seven-year olds (Key Stage 1) and because the teacher can control the content, work can be created for children of different ages and with different abilities.

The pack is supplied with a concise manual in A4 format and two floppy discs. The first disc contains the editor which is intended for the adult to create the activities, the second disc contains the application which the children use to view and use the activities. Also included are three example activities which demonstrate what it is possible to create with *Rainbow*.

Activities can be created very quickly and can include *Draw* files, sprites, text, digitised sound samples and *Maestro* files. *Rainbow* can also animate a sequence of sprites and *Replay* files can be displayed if you have *ARMovie* and *ARPlayer* available.

The manual is clear and well thought out, although will probably not be required to any great extent by anyone other than a complete computer novice. Creating activities for children is incredibly easy, leaving the teacher free to concentrate on the content rather than the program itself.

For those with limited budgets, which seems to be most primary schools these days, this is a program well worth considering as it will enable teachers to quickly produce some excellent resources which they couldn't otherwise afford to buy 'off the shelf.' Add a cheap sound sampler at about £30 and you could produce some 'talking book' type activities. If half-a-dozen local primary schools all had *Rainbow* and a sound sampler, they could between themselves produce a custom reading scheme quite quickly.

Rainbow includes the player, *RainPlay* and three example activities.

Edouard Ciotonte

Product details

Supplier: Longman Logotron
Tel: (01223) 425558
Fax: (01223) 425349
Price: £29 + VAT (site licence £90 + VAT)

Pros: Simple introduction to multimedia • Perfect for young children • Easy to use

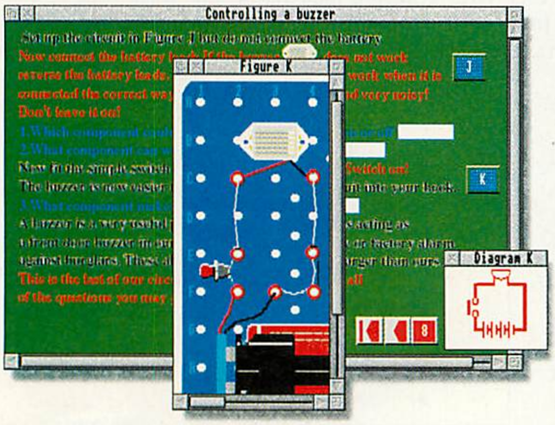
Cons: None (pretty basic, but then it's meant to be)

IN BRIEF

Simple Circuits

Simple Circuits is a computer-aided learning package which aims to help children understand electricity and simple electric circuits. Aimed at Key Stage 2 Science, it offers a practical approach to making circuits and is suitable for both the classroom and the home. It covers lighting a bulb, switches, series and parallel and controlling a motor and a buzzer.

At first glance, £29.95 seems expensive, but *Simple Circuits* includes all the hardware required to make all ten circuits used in the program. Based on the Camboard teaching sets, the circuits can be built to match the software diagrams and then powered by a safe 6 volt battery (not included). The kit includes the plastic circuit board, bulbs, resistors, switches, a motor, a buzzer, a battery holder, and some connecting wire.



Each of the eight problems has a schematic diagram of the circuit and a pictorial one to copy using the hardware supplied. But ugh! that background colour.

Each circuit is explained in text form and is accompanied by a picture of the circuit on the board and a schematic diagram. As the child works through the program, various questions are posed. These can be answered immediately, or returned to later. The idea is that the child should go away from the computer to build and test the circuit before returning to answer the questions. Each answer is graded with a mark, and a printout showing the name with the questions and answers is available.

My only complaint was that the software, I felt, needed a couple of hours further development to tidy up the component sprites (the bulbs look distinctly lop-sided) and the backgound was an ill-considered green colour with red text. That aside, it is a very competent package and one which I would like to see developed. A Key Stage 3 version should also be considered.

Peter Songoff

Product details

Supplier: Camboard Technology
Tel: (01223) 264512
Price: £29.95 (5-copy site licence £99.99)

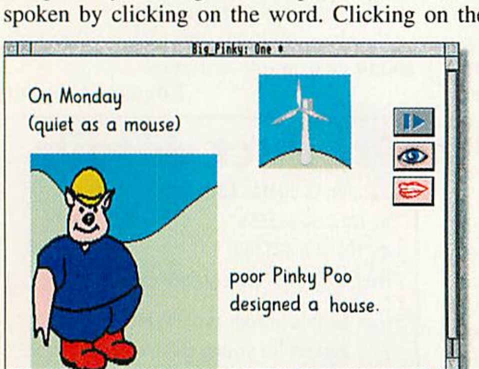
Pros: Teaches kids how to build circuits
• Hardware (but no battery) included
• Tests children and stores marks

Cons: Software's appearance needs tidying

Spelling in context

Programs for the very young are still quite scarce, although more are appearing. *Spelling in Context* by Curriculum Software is a reading and spelling activity for Key Stage 1 children. The pack has five discs: the master disc containing the *Genesis Browser* and *GenLib*, *Fonts* and *System*, while the other four contain the stories Little Dino, Big Dino, Little Pinky and Big Pinky.

Each story is best described as a short talking book of about half-a-dozen pages. The text on each page can be read out by the computer by clicking on the 'lips' icon, or individual words can be spoken by clicking on the word. Clicking on the 'eye' icon animates the main picture. The stories are simple and very suitable for pre-school children.



The Big Pinky story, showing the animation and speech icons on the right.

The alternative to the reading mode is the quiz mode where the user is given exactly the same pages with the same story, except one word on each page is missing. The user is told what word should be entered. This is where a good pair of speakers is vital if you want any chance of understanding the instruction. The answer is typed in but, annoyingly, the user must click the mouse over a box labelled 'Click here to check' rather than press Return. If the entry is correct you get a 'Very Good' message or a 'Hard Luck' message if you're wrong.

I'm bound to say that this looks very much like Sherston's *Naughty Stories*, except the stories aren't quite as good. On the plus side, *Spelling in Context* is cheaper than *Naughty Stories* and does have the spelling feature.

Note to Parents: If you buy this for your child(ren) it's probably wise to print out each of the pages and make a small book that can be used away from the computer. It's definitely a good idea for Mum and/or Dad to spend some time with their child to get the most from the software.

Geoff Preston

Product details

Supplier: Curriculum Software
Address: PO Box 1165, Llangollen LL20 7FZ
Price: £23.95

Pros: Helps to teach spelling and reading to pre-school children • Low price

Cons: Similar to, but not as good as Sherston's Naughty Stories

Questions & answers

Archiving software on the cover disc, university Internet connections and two CD-ROM queries.

Q I bought your August 1995 issue with the excellent *Elite* on the cover disc. However, although it is a great game, the biggest difficulty is not being able to save the position I have reached at any stage because the work is compressed using *ArcFS*.

There is little chance of reaching Elite rating as mentioned after 'months of dedicated play' unless I don't use the machine for anything else. Also, it says on the error message that I can find out how to buy a full version of *ArcFS* by using Menu on the *ArcFS* symbol – I can't!

Ian Skillings
Hartlepool

A **I think you may be getting confused here. We certainly do archive the software on the cover disc – we'd never fit it all on otherwise – but there's nothing to stop you unarchiving the software with the version of *ArcFS* supplied. You will only need the read/write version of *ArcFS* if you want to write something back to the archive on the disc itself; this is never advisable, as there's usually very little free space on our cover discs.**

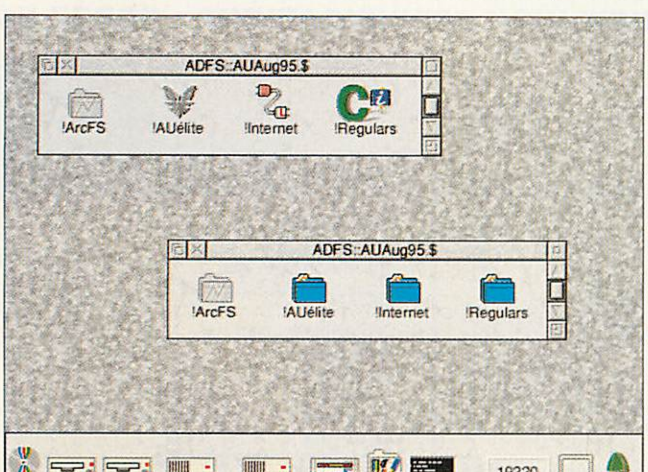
Of course, if you need to archive any software yourself, then the read/write version of *ArcFS* is available from VTi for £24.99 + VAT. This information is provided in the Info box obtained by clicking with Menu over the *ArcFS* icon on the icon bar – you have to run *ArcFS* first to get this. Useful as the full version is, I should point out once again that you *don't* need it to run any of the software on the cover disc.

It's partly our fault. We do our best to ensure that the process of running software off the cover disc is as transparent as possible, and much of it will run straight away without removing it from the archive (this is all down to the cunning of Mark Smith who wrote *ArcFS* and who was interviewed in our July issue).

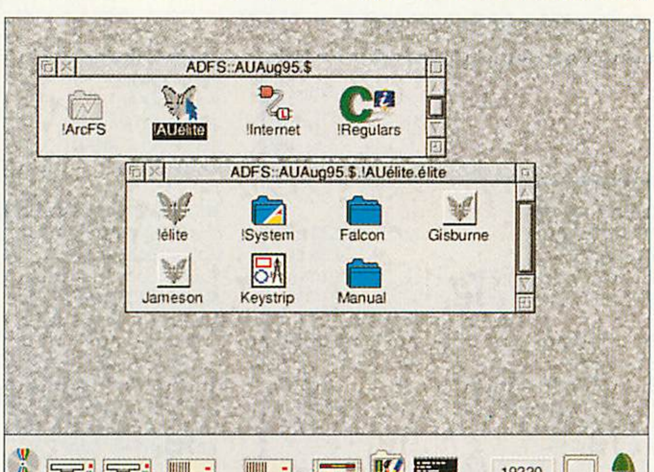
However, this does mean that it is easy to forget that the programs are actually being run from archives, not straight from disc, and this can cause occasional problems. Using the version of *ArcFS* supplied on the disc, you can read data from the disc but not write to it – just as you would be unable to do if the disc were protected with the write-protect tab.

This doesn't stop you from copying the files from out of the archives by dragging them to another Filer window. Using a read-only version of *ArcFS* is certainly not a 'back-door' method of copy protection.

You must, however, make sure that you copy the files from out of the archives and not copy the complete archives themselves. The archives are the first things seen when the disc is clicked upon: they have names like *!Regulars*, and *!AUElite*. The only object in the display opened when you first click on the disc icon which is *not* an archive is the *ArcFS* application itself. A four-step



Step 1: click on the floppy disc drive icon on the icon bar. A window showing the contents of the disc will open, which will look something like one of the two displays above, depending on the operating system in your machine and a few other factors. In both cases what is displayed is the archives on the disc, plus the archiving program *ArcFS*.



Step 2: double-click on the archive that you wish to open. In RISC OS 2 you will need to run *ArcFS* first and may occasionally encounter an error the first time you do this – it should work fine after that. RISC OS 2 users will see a directory display containing three files and a directory: double-click on the directory to open it.

guide to copying files out of the archives is shown below.

This applies wherever you have an application that needs to save choices or data internally, any file that you want to modify, or anything where the documentation says 'this application must be copied out of the archive before it is run'.

VTi is on (01243) 531194.

Q When I start university in October I would like to connect my computer to the college and university networks to gain access to the Internet/WWW/e-mail and the university's own resources. Which software would be appropriate for this? Can the software in the Internet starter kit be used? I own a Risc PC 600, but have not yet bought the Ethernet card.

I would also like to use a parallel-interfaced CD-ROM drive, since the second IDE connector in my Risc PC is used by a second hard drive. What is the parallel port maximum transfer rate in terms of drive speed? Is Cumana the only supplier? Would I encounter any problems with my Epson *TurboDriver* or my *Impression* dongle?

Nigel Parker
Newton Abbot

A **The level of Internet connectivity that you will be able to get from your university computer depends very much on the level of 'enlightenment' of your chosen university. Some universities will give you a direct feed which you will be able to hook up to by using an Ethernet card – others will only allow you indirect e-mail and news access.**

If you can get a direct feed, then *KA9Q* in the Internet Starter pack still won't really be much use, as that is more tied to dial-up connections. However, Acorn's DCI4 stack – recently released into the public domain on the Acorn ftp site – will be exactly what you need. This doesn't come with e-mail and news applications, but the ones being developed for the *FreeNet* TCP/IP stack should be compatible.

My best recommendation would be to find an Acorn owner at the particular university who is already connected and ask how she or he did it – if this is possible.

The Cumana Oscar drive which attaches to the parallel port runs at pretty much double-speed drive transfer rates of just below 300Kps (kilobytes per second), though this is mode-dependent. Eesox does two parallel drives: a 290Kps double speed drive and a 480 – 500Kps quad-speed drive. Both of these rates are slightly down on what you'd normally get from double- and quad-speed drives.

I believe that this is about the limit of the parallel port, although Eesox's *CDFast* or Cumana's *SpeedyCD* cacheing software will certainly improve how fast the drive 'feels'.

The Cumana drive has a second printer port on the back to which you attach your printer and dongle. This works well, though *TurboDrivers* may cause a problem, as the *TurboDriver* cable is deliberately wired in a non-standard way; using CC's *PrintQFS* application should cure this. You may still end up needing to use two cables.

With the Eesox drive you will certainly need to buy a parallel port splitter to share the port, as this drive has no second port on the back.

Cumana is on (01483) 503121 and Eesox is on (01954) 212263.

Q I would like to add a CD-ROM drive to my setup as I there are a number of CD-ROMs which will be useful for the educational uses that my children now have for my computer. I am, however, unsure whether I can add a CD-ROM drive to my system.

I have an Acorn A3000 upgraded to RISC OS 3.1 with 4Mb of RAM. The one internal expansion slot is taken up with an ICS 80Mb hard drive.

Mr R Hewett
Erith

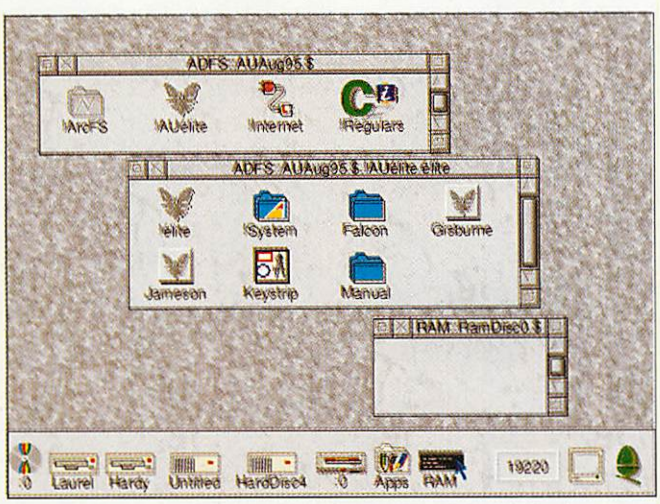
A **You will need to connect your CD-ROM drive to the A3000's external podule interface – this involves buying what is basically a standard podule with a protective case (which therefore tends to put the price up by around £25).**

If you want a CD-ROM-only interface, both Morley Electronics (0191-257 6355) and Cumana £259 + VAT (see above) do these.

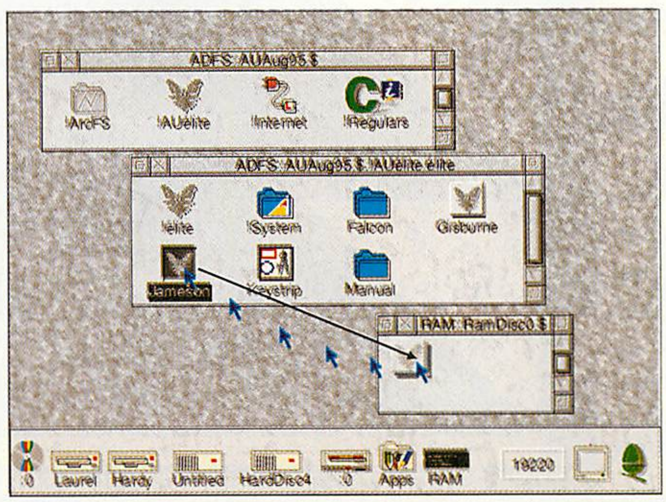
Your other option is to go for a SCSI interface. This will cost between £50 and £100 more but will make your system expandable with other SCSI devices. Both the above companies offer SCSI solutions, along with many others such as Eesox (see the last reply), VTi ((01243) 531194), Castle Technology ((01728) 621222), CJE Micros ((01903) 213361) and AlSystems ((01420) 561111).

Make it very clear if you order one of these that you are after an *external* interface for an *A3000*, as this is the only machine with this set-up. Because it is an older machine, many companies do not actually keep the external version of the A3000 interface in stock. You may have to buy the standard podule card and get the casing separately – Watford Electronics ((01923) 37774) is one company that does this.

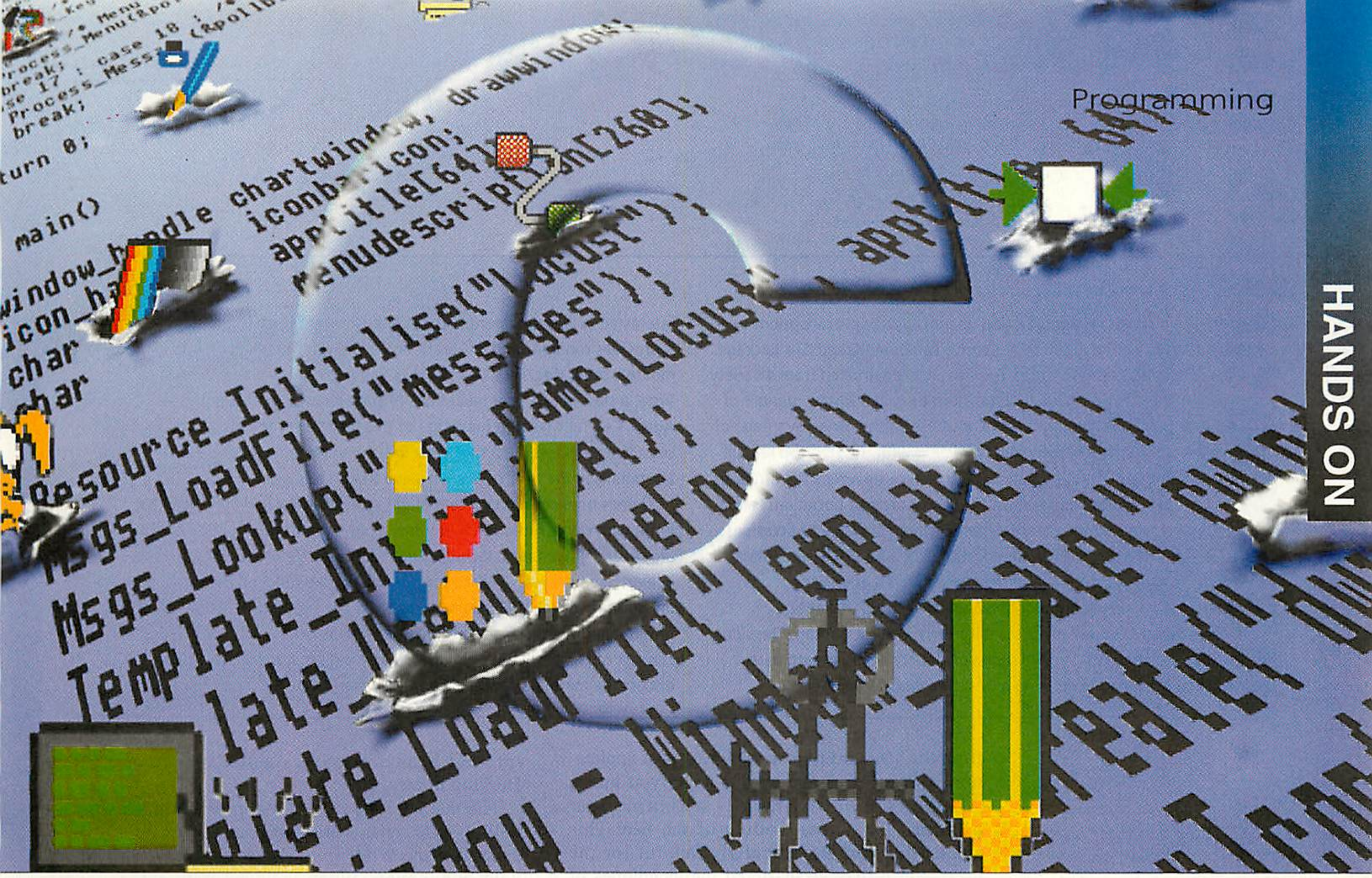
Unfortunately, as the A3000 doesn't have a bi-directional printer port, you can't attach one of the printer port CD-ROM drives. AU



Step 3: open another window on a different disc. This could be the RAM disc (as here), your hard drive or a second floppy disc. If you use a second floppy disc then, when you come to copy the files across, you will be prompted to change discs at the appropriate point, unless you have two floppy drives in your machine.



Step 4: drag the relevant files from the archive window to the window opened on the other disc. The files will be decompressed as they are copied. In this case, only the *Elite* commander file has been copied, as the program itself will happily run from inside an archive. Don't forget to copy the file from the RAM disc before you turn off the computer.



JACK KREINDLER

C for yourself

Steve Mumford introduces the ideas behind writing a multitasking application.

Welcome to this month's C tutorial – before we embark on the convoluted route to a fully multi-tasking application, I thought I'd have a look at the changes we'll have to make in order to code a program capable of running in the Desktop. Although by now you should have a good grasp of the ins and outs of the language, there's a whole new range of ideas to consider before we can start knocking windows round the screen.

So far, we've been writing single-tasking programs which operate outside the co-operative multi-tasking environment of the Desktop – once you've started their execution, they'll carry on regardless until they crash, terminate themselves or get hijacked by a bored user pressing Escape. This is all very well for a simple application, but unless your program is so processor-intensive that multitasking is infeasible, there's a lot to be gained for writing your code to run in the Desktop.

Benefits of multi-tasking

Implementing a point-and-click interface can increase user friendliness and ease of operation, and the fact that other applications can be executing concurrently removes some of the insularity that can dog a single-tasking application. A good example of this is the use of object linking and embedding to provide the user with a fast way of editing files within files. For instance, Computer Concepts' *Impression* allows the user to embed an object such as a sprite or a table within a document. A couple of mouseclicks in the right place, and *Impression* automatically loads the appropriate application, passing the file over. The user can then make any changes as required, and once *Impression* detects that the modifications are complete, the original file in the master document is updated. This form of interactivity would be particularly difficult to implement in a single-tasking environment.

Another benefit of writing applications to run in the Desktop is that the programmer can make use of the resources already provided – instead of spending time creating a comprehensive cataloguing system so that the user might look through a disc and load a file, you write routines that listen out for the WIMP's broadcast messages. As soon as an icon has been dragged

Making the switch

Depending on which version of C you've purchased, several options will be open to you. Firstly, if you own Acorn's combined C and C++ package, you'll have access to the so-called *Toolbox*. It's constructed from a variety of relocatable modules whose functions can be called from a number of different languages including C, BASIC and Assembler. One advantage of this system is that the methods for interacting with the Desktop remain the same no matter what language you're using – however, I'm afraid to say that Acorn's *Toolbox* manual isn't the most lucid of documents and I caught myself heading for a mental meltdown on a couple of occasions. Older versions of Acorn's C included *RiscOS_Lib*, a library to add WIMP functionality to C. It's not been widely used, and I'd advise the application of a sizeable bargepole when considering this option.

Beebug's *Easy C* comes complete with the Freeware package *Desklib*, supplying the user with a whole range of C functions that automate some of the processes of running a Desktop application. If you're interested in learning more, a comprehensive reference to the functions it provides can be found in Gareth Boden's *CHelp*, supplied on last month's cover disc. *Easy C++* supplies you with a provisional version of *Vista*, a class library that makes use of the enhanced features of C++. Again, C++ falls outside the range of this tutorial for the moment, and since I've been informed that *Vista* will be undergoing some sizeable alterations in the near future, I'll leave that to one side.

There's one more option that might appeal to some of you – why not write your own? Although it requires a fair amount of extra work there are several advantages, including the fact that if you're the programmer behind it, you're less likely to forget what all the function calls do. From my point of view, it will allow me to cover the techniques behind WIMP programming without getting too involved, as well as introducing the concept of creating your own library. It also gives me the opportunity to discuss the methods of making SWI calls from within C.

from the standard filer windows to your application, a WIMP message arrives to let you know. All that's required then is a routine that performs the actual loading of the file. This standardisation is particularly helpful for the user – once they've mastered the techniques of moving files about in the Desktop, that knowledge can be applied to the majority of RISC OS applications available.

At this point, we've got our single-tasking application working, and we want to alter it so that it runs under the WIMP system. Several changes will be necessary, but the actual amount will depend on how the source code was written in the first place. A single-tasking program doesn't need a definite program structure since it's got nothing else to contend with. Functions can call each other as they see fit, and there's no way of knowing which point the execution has reached within the code.

This is unsatisfactory in a Desktop program due to the way RISC OS operates its multitasking system. On some computers, multi-tasking is automatically enforced, and there's not much the programmer has to do about it. Once the central controller has deemed that a host application has enjoyed enough run time, it will cut that one dead and move onto the next. In this way, the individual programs don't have to be aware of each other. It's perhaps easier to program for, but there's less communication between the applications.

In Acorn's co-operative multi-tasking environment, it's up to the individual programs to make sure they don't hog the computer's resources. This technique is more flexible, but it requires more housekeeping and tighter program control on the part of the applications running under it – one of the disadvantages of programming the WIMP in C. At the merest hint that you might want an application to run in the Desktop, the sourcecode starts bristling with references to header files that are scattered about your hard disc or – as I endured for some time – across stacks of floppies. This can make it difficult to jump into a program you've not seen before and understand what it's doing, since it's hard to tell whether a function is defined as part of an internal header file or is actually part of a Desktop library.

The main feature of a Desktop program is its polling loop – the section of code that is called each time the WIMP gets round to dealing with your application. When your program gets to the front of the queue, the WIMP passes control back to the polling loop with any relevant information about the state of the program contained in a data block. At this point, the routine should examine any messages the WIMP has handed it, and act accordingly. Any short operations can be executed completely within the polling loop, but drawn-out procedures should be split over several polls so any other multitasking applications don't grind to a halt. A 'tame' application will keep an eye on the time it's taking up, and if a delay is unavoidable, it should inform the user by displaying the hourglass.

The big catch

There's one problem to consider before you happily grab your reference manuals and design all manner of weird and wonderful templates. As soon as you add the necessary code to allow your program to run within the Acorn Desktop, your application is no longer portable. If you want to transfer your multi-tasking marvel to another machine, major surgery is required, and although a proportion of your code could remain untouched, a large amount would have to be altered to suit the windowing protocols on the target computer. With this in mind, it *is* possible to write source code so that these changes are minimised, but this requires strong knowledge of both prospective compilers and I won't attempt to cover that just yet. Having said all that, I believe the advantages of using the Desktop far outweigh the portability problems encountered, so our next step is to choose a method of programming the WIMP.

Over the next few months I'll look at the methods of building up a multitasking application, starting with the process of initialising the task before moving on to the creation of windows and icons. See you on the Desktop. AU

Absolute beginners

David Matthewman continues to look at the Filer, the core of operations on the Desktop.

Last issue, I looked at how files on a disc were organised into a directory structure; now I'll move on to what you can actually do with the files. Broadly speaking, this boils down to two main activities – moving or copying the files and running them – and a host of other miscellaneous operations such as renaming files, deleting them or changing who can access them.

I've grouped the activities like this because this best fits the different mouse operations required to perform them. I'll now look at each in turn.

Drag and drop

If you've read any documentation about RISC OS – or indeed most other operating systems these days – you will have seen the phrase 'drag and drop' cropping up a lot. What it means in a nutshell is that in order to move an object – be it text within a document or a file on a disc – you click on the object, *drag* it with the mouse and *drop* it in the window or position that you want it to go.

I covered 'dragging' with the mouse in the first article of the series back in April, but in case anyone doesn't know what it means, here's a quick recap. To drag something with the mouse, click with Select (the left hand mouse button) and move the mouse while keeping the button held down. You will drag a representation of the object – usually either an outline or an icon – around the screen; when you release the mouse button the object is placed wherever the pointer now is on the screen. (This is dragging as applied to drag and drop; it is used in a number of other circumstances as well, for instance drawing or painting in a graphics package.)

When it comes to the Filer what this means is that to copy a file from one directory to another you must open both the window of the *source directory* (the directory containing the file to be copied) and that of the *destination directory* (the directory to which the file is to be copied). You then click on the icon of the file you wish to move, drag it to the destination directory window and release the mouse button.

If you Shift-drag the file – drag it with the Shift key held down – then the file is moved rather than copied, in other words it will be deleted from the source directory.

There's a screenshot showing drag and drop in action on the Questions and answers pages, which I'm not going to waste space reproducing here. The process is very simple to understand and natural to use; it's just like picking up an object on a desk and moving it around, although unless you have Shift pressed you will actually be moving a *copy* of the original object.

If you have used RISC OS much then you will probably be wondering at this point why drag and drop is even worth mentioning. How else would you do this, you may wonder? Actually, some systems require you to copy a file by selecting a file and then working through an awkward dialogue box to choose the destination.

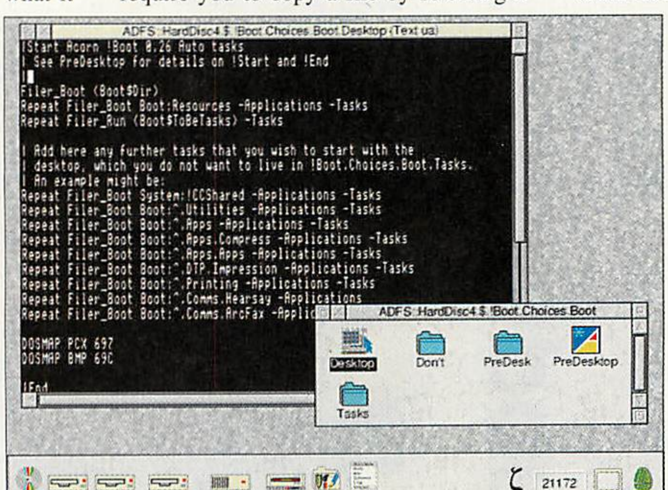


Figure 1 – a few common file types, with the standard representation of their icons.

Furthermore, the philosophy of drag and drop permeates the whole of RISC OS; if you want to transfer data (text, graphics, sound and so on) between programs or save them to disc then you drag an icon and drop it where you want the data to end up. This ability is very state-of-the-art – Windows 95 includes it and there is an excellent implementation on System 7.5 on the Mac – but it has been there in RISC OS right from RISC OS 2. Because of this, RISC OS programs on the Archimedes all work in this way, and moving data around becomes a doddle.

Running a file

To run a file, double-click on it. It's pretty much as simple as that. Exactly what happens when you run the file depends on its file type; different types of files have different icons. Some files are programs (see the ✱INFO section for some examples) and double-clicking on them runs the program.

However, with a lot of files, 'running' them actually means loading them into some program to view or edit them. In order to do this, the operating system needs to know which program to load them into. If you have opened a directory (at any point since switching the computer on) containing an application (program) which understands that file type, then that application will usually be run and the file loaded into it. If you are already running the relevant application then the file will usually be loaded straight into it without running a second copy of the application.

If you encounter the error 'No run action specified for this file type' this means you have not opened a Filer

ABSOLUTE BEGINNERS

Jargon box

Destination directory: The directory to which a file is being copied.

Drag and drop: a method of moving data around where an icon representing the data is dragged on the Desktop and 'dropped' (the mouse button released) where the data will end up. Files on a disc are moved around in this way.

Selecting a file: highlighting a file so that any Filer operations you perform will be performed on that file. You can select more than one file, and selecting is done automatically when you drag or double-click on a file.

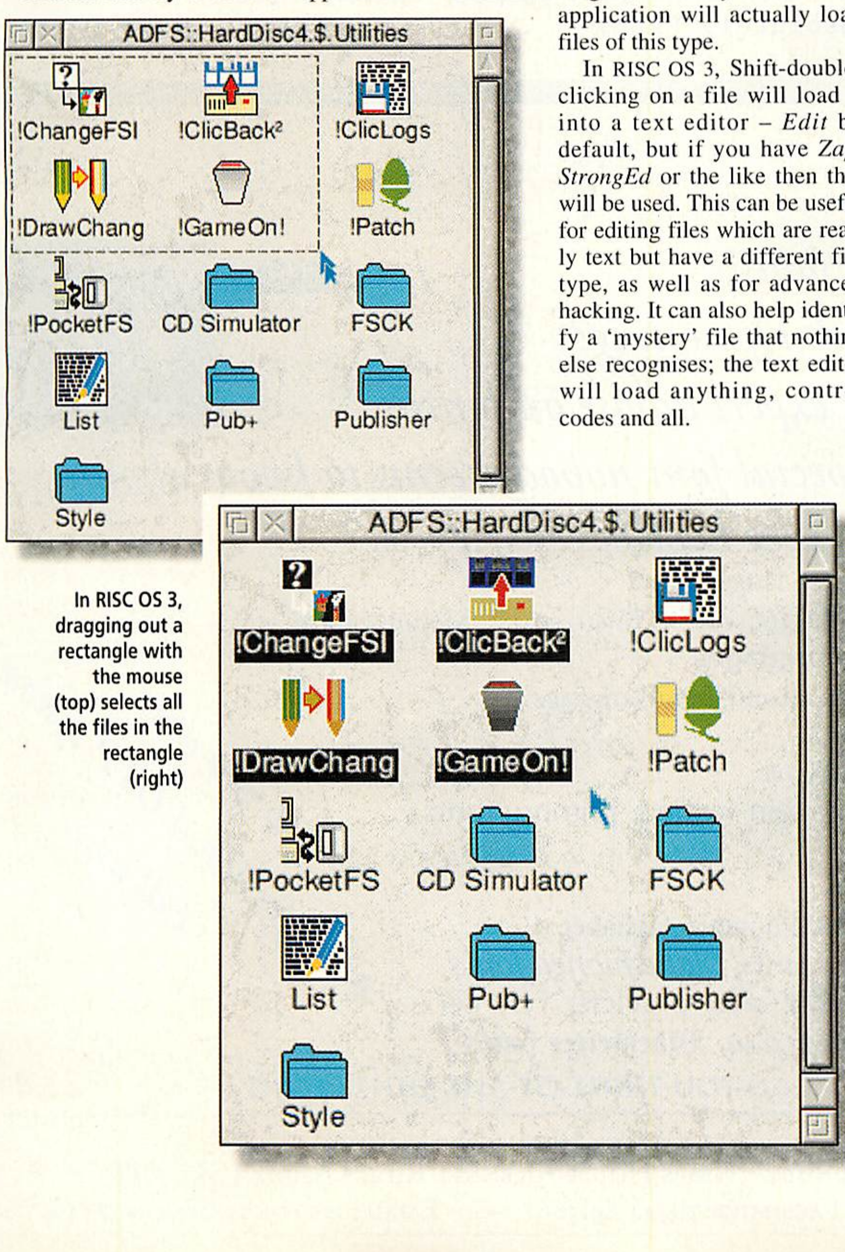
Source directory: The directory containing a file which is being run or copied somewhere else.

window containing an application which understands this type of file – the Filer is said not to have 'seen' such an application. If you know the file type then the solution is easy – open the window containing the application to handle that file. If you don't, then you'll have to make an educated guess, or just open every window in sight until something recognises the file; when this happens the file's icon will usually change from a blank square to a picture of some sort.

You can also try to force an application to load a file by running the application and dragging the file to the application's icon on the icon bar. For instance, you could load a BASIC program into *Edit* in this way (though this won't work well with the RISC OS 2 edit which won't decode BASIC properly). Of course, if the application really doesn't understand the file, it still won't load it.

If you drag the file to the window of a document you are editing, the application will try to load the file at that point in the document – again, this only works if the application will actually load files of this type.

In RISC OS 3, Shift-double-clicking on a file will load it into a text editor – *Edit* by default, but if you have *Zap*, *StrongEd* or the like then that will be used. This can be useful for editing files which are really text but have a different file type, as well as for advanced hacking. It can also help identify a 'mystery' file that nothing else recognises; the text editor will load anything, control codes and all.



In RISC OS 3, dragging out a rectangle with the mouse (top) selects all the files in the rectangle (right)

Selecting files

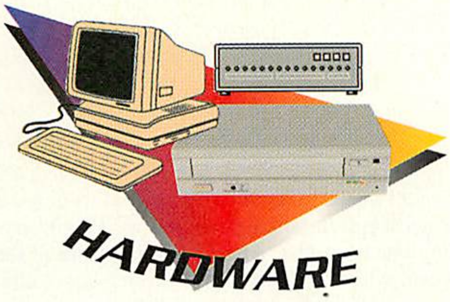
Clicking with Menu over a Filer window opens a menu allowing you to perform a number of operations on the window or the files therein. If you click with Menu over a particular file, the second entry on the menu will become 'File 'File name'', and you will be able to access a submenu to perform operations on that file. The complete menu structure will be covered in much more detail in the next issue, but what is important here is the concept of 'selecting' a file.

When a file is selected, its icon and associated text are inverted. Clicking once on a file with any of the three mouse buttons will usually select it. As I have just said, if you use the Menu button then a menu will be opened immediately over the file, so without moving the menu you won't actually be able to see that the file has been selected. Clicking with Select selects the file and clears any other selections, and clicking with Adjust adds the file to any other selected files. Adjust will also de-select an already selected file.

With RISC OS 3, you can select a group of files by dragging a selection box round them; start at one corner, drag with Select, and release the mouse button at the far corner. Dragging with Adjust toggles the selected status of the files and adds to any selection already made. You cannot select files in more than one directory at the same time.

If there are one or more files selected when you click with Menu over a Filer window, any choices you make on the menu will affect the files selected. You can also drag and drop groups of files – to copy them, load them into an application and so on – but you cannot run a group of files by double-clicking them.

In the next issue, I will look closely at the Filer menu which allows you to rename files, change who can read and write them, change their type and numerous other operations. AU



'3D or not 3D, that is the question?' claims Mike Cook in the latest instalment of the hardware series.

Run the RISC

Last month I promised you something completely different and I hope this lives up to that promise. Readers that followed my articles in *Acorn Computing* will know that my definition of hardware includes anything that can be added to a computer. This is nearly always electronic but it does not have to be so, and occasionally I like to make a excursion into 'non-electronics land'.

Now, I am fascinated by true 3D or stereoscopic displays from computers and I published a method of generating them in the June and July 1993 issues of *Acorn Computing*. This was my Twin Peeps or 'nose trimmer' system that consisted of rotating shutters synchronised to the computer's frame rate (it earned its alternative name from the fact that you had to put your face rather close to the rotating blades). The computer performed bank-switching every other frame, thus ensuring that each eye saw a different image. If you attended any of the shows that year you might have queued up for a brief look; it certainly was very popular, and most people were very impressed. However, two things mitigated against a large number of people building it. First of all it was expensive – the servo motors and electronics cost about £80 – and secondly, the editor somehow missed publishing the circuit diagram. If you do want a copy of the full article plus the missing diagram, please send me £1 to cover costs.

All done with mirrors

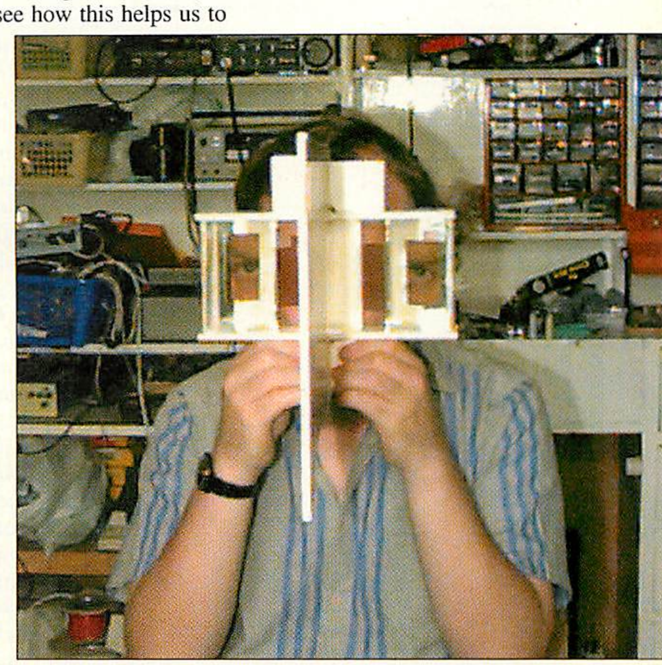
Well I am at it again, but this time there is not a wire in sight. It all started when I was looking at one of those 3D books, the sort where you have to make your eyes go squiggly to see an image. There are two types of these pictures, one where you have to stare straight ahead and the other where you have to make your eyes go cross-eyed. Now I am not very good at the second sort – I can just about do it but the image is blurred – but most of the photographic images require this sort of viewing.

I thought of the View master slide viewers that present a different image to each eye by moving the slides very close to the eye. These compensate for the fact that you can't focus on anything that close by having a lens in front of each eye. I began to wonder if something similar was possible to produce on the computer screen and came to the conclusion that the problem was that our eyes are simply too close together for it to work.

Now, having found the problem it was possible to come up with a solution but I thought that major surgery would be even less popular than my nose trimmer. Fortunately, there is another way and, as they used to say, it is all done by mirrors. Consider Figure 1; this shows how your eyes alter depending whether you are focusing on a close object or one at infinity; here 'infinity' means optical infinity which is about 30 feet, the distance at which light rays appear to arrive in parallel as far as the eyes can tell.

If we were to place two images on the computer screen and look at one with each eye we would perceive the combined image as lying at infinity. The problem is that in order to do this, your eyes have to be very close to the screen and this presents two problems. First of all you can't focus that close. It is true that we could use a compensating lens but that would not work so well because of the second problem. This is the fact that if you are close to the screen then you are only looking at a small area, so there are not very many pixels, meaning the resolution is poor. The way out of this is to move further back from the screen, but this stops each eye seeing just one image unless they can be moved further apart.

This is where the mirrors come in. By using four mirrors we can see an image as if our eyes were further apart. Let's see how this helps us to see in stereoscopic 3D. Look at Figure 2. In 2a we have placed an image in the centre of each half of the computer screen; we look straight ahead with our eyes and the mirrors bend the light so that we see the object at the same place in each eye, thus it appears to be a long way off. Now, if the images are displaced slightly towards the centre of the screen each eye has to be turned slightly in to see it. Looking at Figure 2b, we see that if you trace the lines of the light rays through the screen they will eventually cross. It is at this crossing point where the brain perceives the object to be sitting.


An alternative to major surgery.

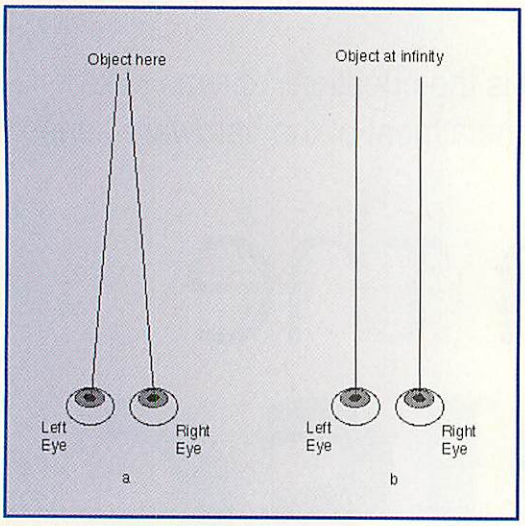


Fig 1: How the eye views objects.

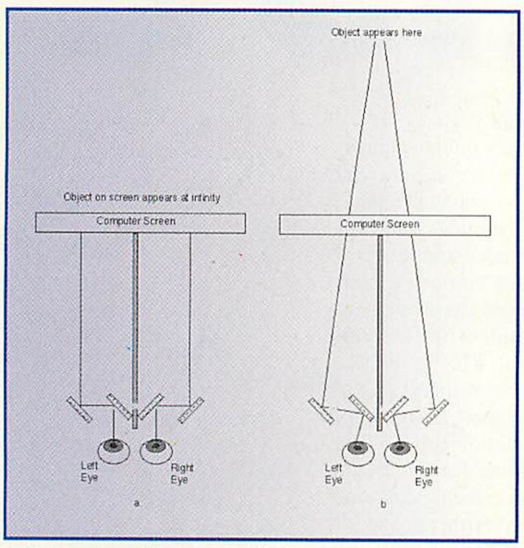


Fig 2: How to get the stereo effect.

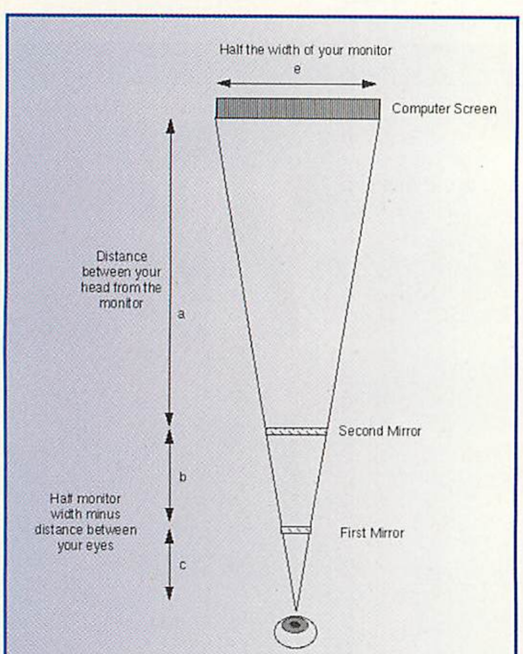


Fig 3: The optical path.

Of course this is all relative – if we only have one object we will not get a strong perception of depth at all. But, with two or more objects at different displacements, the brain springs into action and we perceive depth. Now, there are other depth cues that the brain works on as well. For example, distant objects appear smaller and are partially obscured by objects close to. Adding these extra factors will add to the sense of depth perception and non-consistent factors will reduce it.

It is worth noting that with this arrangement, the apparent depth of all objects lies behind the screen. With the nose trimmer it was possible to perceive objects both behind and in front of the screen. This means that when you are looking through the mirrors you must try to look through the screen to the objects, not at the screen.

Constructing the viewer

Well, that's the theory so how about making one?

The problem we are faced with is what size to make everything. Now, I worked out the dimensions for my 17in monitor on my Risc PC, but having built it I found it worked just as well with the 13in monitor on my A310. Well, not quite just as well as the resolution was not as good, but otherwise fine. Therefore, I have concluded that the actual dimensions are not too critical, but let's see how to calculate them in any case.

If you look at Figure 3 you will see the optical path on one half of the device – this has been straightened out to make the calculation easy. You basically have an equilateral triangle with the two mirrors being parallel to the screen. If you remember your trigonometry you know that you can work out the angle at the eye from the base and perpendicular height. Knowing that, you can find out the size of the first and second mirrors. With all matters like this you are best to start out by guessing one dimension and working everything out from that. Apart from the width of the screen, which is fixed, I thought that about 20in was a comfortable distance to be from the screen.

Rather than go through all the calculations, let's go on to Figure 4 which is the actual mirror cell I built. The height of the cell was mainly determined by the sizes of mirror I had to hand; these were about 5cm by 6cm for the first one and 10cm by 7.5cm for the second mirror. At first I thought of building it out of strong cardboard but then I came across some foam-filled mounting board in the art shop. This is a 0.5cm thick sandwich of thin card and plastic foam; the result being that it is very strong and very light. The price is also fine at about £3 for an A1 sized sheet, and it is very easy to cut if you use a sharp hobby knife.

The mirror cell consists of four mirror support pieces sandwiched between two rectangles. It is vital that you make this as accurately as possible with the angles being 45 degrees and the mirror supports being exactly at right angles to the base pieces. I found it best to use a small set square to make sure the mirror supports were as accurate as possible.

For fixing I used a two stage approach. First of all I positioned the pieces and used a small amount of superglue; this gave a little working time to align the pieces exactly. Then, when it was set, I went over the butt joint with a fillet of hot melt glue, which provided a rapid and strong construction.

Next I mounted the mirrors onto the supports using double-sided sticky tape. The second mirrors covered the whole of the mirror mount but the first were stuck on the middle of the mount and made to protrude so that I couldn't see directly ahead round the side of the mirror. It sounds complex but just try it and see.

Fine-tuning

With the mirrors mounted it became clear that, despite all my efforts, the mirrors were not exactly parallel. This has the effect of moving one of the images up or down and I got a sort of double vision when you look through it. This could be eliminated by rotating the whole cell but that solution was not very satisfactory. I noticed that despite the apparent robust construction I could move the images by stressing the mirror cell. The two images do not have to be aligned precisely as the brain can take up some of the slack, but too far out and you will get double vision.

What I did next was to add the dividing screen to the mirror cell, which prevents one eye from seeing the image it is not meant to and also improves the rigidity of the mirror cell. I cut a rectangle out of the end of the screen piece and slotted the mirror cell into it as shown in Figure 5. At the top and bottom of the mirror cell on each side I placed a square of board and glued it in to add a little rigid support for the cell.

With the mirror cell as firm as possible, I adjusted just one of the second mirrors as shown in Figure 6. One edge was fixed with double-sided tape and the other was moved until I couldn't see a double image. This position was

held securely until a fillet of glue was run down the edge of the mirror. The amount the mirror had to be moved was only very small, but it did make the whole thing work.

I am conscious in writing down the instructions to make this that it does sound much more complex than it really is. However, armed with our artificially spread eyes, lets have a look at what software you need.

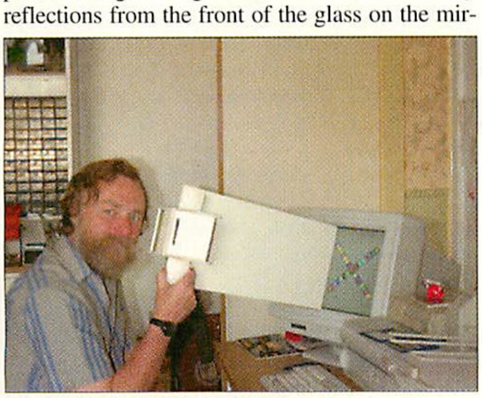
3D software

On the cover disc is 3Ddemo, a small collection of graphics routines to show off the system which have been adapted from my original nose trimmer demos. The secret to working in 3D is the procedure PROC_Side(n). This sets up the graphics origin and the graphics window to coincide with the side of the screen passed to it in the variable n. Note here the sides are 0 and 1 for left and right. This works in conjunction with PROC_3D(x,y,z,p) which produces a move or draw (depending on the value of p) on both sides of the screen. However, the drawing on the left-hand side of the screen is displaced in the X direction by a factor determined from the depth variable z. In this way, drawing is done by the familiar move/draw combination.

In order to accommodate every Acorn RISC computer, no assumptions are made as to the size of the screen nor the mode it is in. Instead, the screen display parameters are extracted from the operating system and the routines work to those parameters. The better screen mode you can implement on your machine the better the end result will look.

As I said before, the stereoscopic effect is enhanced by other perceptual cues such as size and overlapping of objects. That's why I think the pyramid of balls gives a good effect. There is an overlap of more distant balls and a grid to give your eye and brain a point of reference – see what you think. The trick when looking through the mirrors is to try and stare straight ahead and let your eyes do the focusing. One interesting fact I discovered is that when looking at ordinary objects through this arrangement you get an incredible increase in perceived depth. Everything looks closer than it really is and the perspective is greatly exaggerated. I think I'll patent it as a device for people playing bowls.

One problem I did encounter was that thin white lines on a black background did tend to produce a ghosting effect. This is caused by reflections from the front of the glass on the mirrors. The real solution would be to use front silvered mirrors but these are quite hard to get hold of unless you have access to a vacuum deposition unit. What I did was to make sure there was not such a strong contrast on thin lines hence grey backgrounds and grey grid lines.



What *will* Mike's wife think?

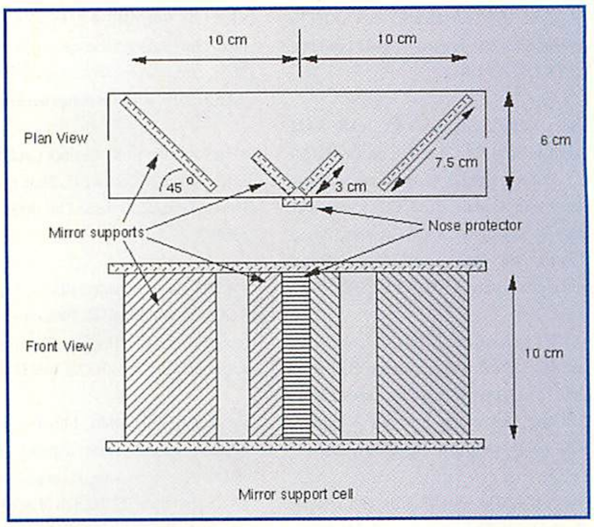


Fig 4: The mirror cell.

Other images

I have done some experiments with digitised photographs and ray-traced images, but these are too big to squeeze onto the cover disc. However if you have access to the Internet they are available on my anonymous ftp site 149.170.200.3 in the images directory. To view them simply run two copies of *ChangeFSI* and arrange each window to cover half the screen; you will have to watch how you scroll these.

I could really do with an application that scrolled and moved two windows together – how about someone writing one? Also, how about a 3D mouse pointer – some software that keeps the mouse to half the screen and duplicates it on the other half with some of the mouse buttons altering the depth of the pointer? I am sure there is more than enough you can do with this project.

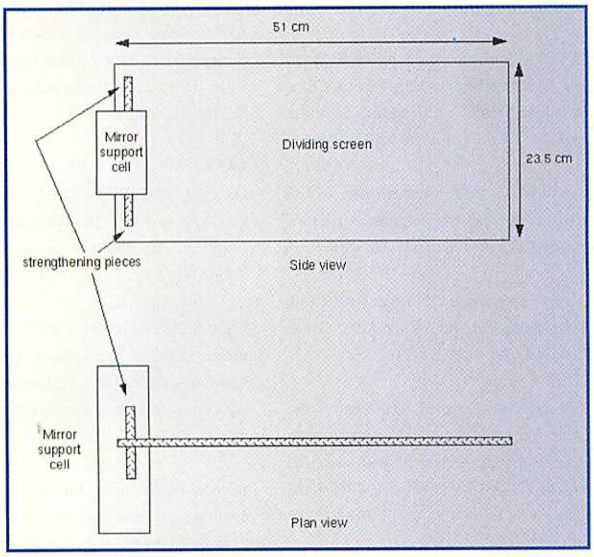
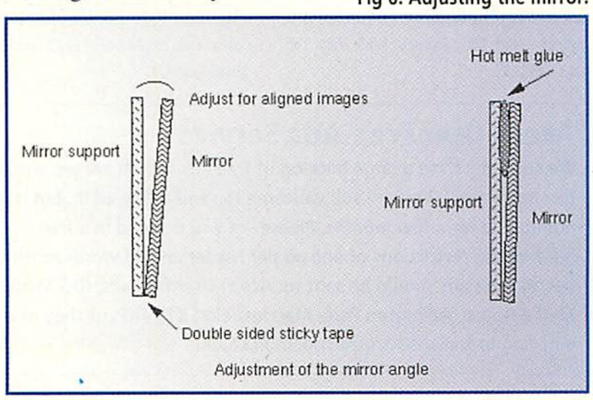


Fig 5: The dividing screen.

As a postscript, while I was developing this system and sitting in front of the computer holding up all sorts of mirrors and cards my wife said: 'Mike, why do you always have to design things that when you're testing them make you look like a prat?' I was reminded of those lines by Douglas Adams in *The Hitchhiker's Guide to the Galaxy* '...he was a dreamer, a speculative thinker or, as his wife would have it, an idiot'. Twas ever thus.

Now where did I put that fairy cake? AU

Fig 6: Adjusting the mirror.



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• Microeye internal podule expansion card for Acorn 400/4000/5000 computers. Grabs pictures from video recorders/cameras. £25 new. Hates my Risc PC. Tel: (01234) 212759.

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• Wanted: Freelance programmers, writers, artists and musicians to join us producing both PD and commercial software. Contact: Software 7, 15 Stewarton drive, Cambuslany, Glasgow, Scotland, G72 8DF. Reply guaranteed.

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• A5000, 4Mb RAM, 120Mb HD, 3.5" floppy, multisync monitor, DOS emulator 1.9. £750 ono. Loads of games and applications. Price negotiable. Tel: (01252) 519253.

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• A310 4Mb RAM, 20Mb HD, Acorn colour monitor, RISC OS 3.1, ARM3. £400 ono. Tel: Nick on (01689) 878671.

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• Acorn Archimedes 305, 4Mb RAM, 40Mb HD, RISC OS 3.1, colour monitor, PC emulator. Lots of software and games. £325 ono. Tel: Jason on Rotherham (01709) 370112.

• A4000, 80Mb hard drive, AKF40 stereo monitor, lots of software and magazines. £450. Tel: Yeovil (01935) 25974.

• Wanted – contacts, especially those into games and trying to learn C like myself. Tel: (01935) 25974.

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A7000 Systems	14"	17"
A7000 2M NET	£889	£1159
A7000 2M NET CD	£999	£1259
A7000 2M HD425	£929	£1199
A7000 2M HD425 CD	£1029	£1299
A7000 4M HD425	£1019	£1289
A7000 4M HD425 CD	£1129	£1399

All above systems are covered by 1-year on-site warranty

A4000 Systems	AKF52	AKF50
A4000 2M HD210	£719	£759
A4000 2M Early Years	£759	£799
A4000 2M Learning Curve	£759	£799
A4000 2M Home Office	£789	£829

A3020 Systems	AKF52	AKF50
A3020 2M FD	£509	£549
A3020 2M HD80	£629	£669

A3010 Systems	No Mon	AKF50
A3010 1M Action Pack	£149	£349
A3010 2M Early Years	£339	£509
A3010 2M Learning Curve	£339	£509

A4 Notebook	No Mon	AKF50
A4 4M HD80	£1439	–

Upgrades & Options

RiscPC Options

Memory

4Mb	£88	8Mb	£203
16Mb	£319	32Mb	£669
1Mb VRAM	£49	2Mb VRAM	£110

IDE Hard Disk Drives

Conner CFS420A 420Mb	£99
Conner CFS635A 540Mb	£115
Conner CFS850A 850Mb	£128
Conner CFS1080A 1.08Gb	£176
ADFSManager software	£25

SCSI Hard Disk Drives

IBM 84G9001 1.0Gb	£299
IBM 74G7044 2.0Gb	£699
IBM 74G7045 4.0Gb	£1099
32bit SCSI Interface	£159

CD-ROM Drives

Indigo Dual Speed CD-ROM	£175
Indigo Quad Speed CD-ROM	£199
Proteus 4x CD-ROM/Optical *(requires SCSI-2 interface)*	£549

Miscellaneous

486SX33 2nd Processor Card	£199
Ethernet Interface	£99
Additional Case Module	£99
3-year On-site warranty	£poa

Acorn Pocket Book II

Pocket Book II 256K	£202
Pocket Book II 512K	£249
Pocket Book II 1Mb	£279

Accessories

128K RAM	£49	256K Flash	£59
512K Flash	£85	Mains PSU	£12
A-Link	£42	PC Link	£59
MAC Link	£68	Parallel Link	£25
Plotter	£16	OPL Editor	£21

EDUCATIONAL DISCOUNTS are available on certain products, call 01582 745555 for details

3.5" IDE Hard Drives

Conner			
CFS540A	540Mb	12ms	£108
CFS850A	850Mb	12ms	£128
CFS1275A	1.27Gb	11ms	£176
IBM			
84G8998	1.05Gb	10ms	£189
Maxtor			
7540AV	540Mb	12ms	£109
7850AV	850Mb	12ms	£139
71260AT	1.26Gb	12ms	£199
Quantum			
Trailblazer	420Mb	12ms	£99
Fireball	540Mb	12ms	£119
Trailblazer	850Mb	12ms	£138
Fireball	1.08Gb	12ms	£174
Seagate			
ST3660A	545Mb	12ms	£102
ST5850A	850Mb	12ms	£138
ST31220A	1.05Gb	12ms	£168
Western Digital			
AC2635	635Mb	10ms	£115
AC2700	740Mb	10ms	£145
AC2850	850Mb	10ms	£134
AC31000	1.1Gb	10ms	£179
AC31600	1.62Gb	10ms	£365

Interfaces & Accessories

16-bit IDE Interface – A300/A400	£39
8-bit IDE Interface – A3000/A3010	£59
Dual IDE Interface cable	£8
A300/A400 HDD Mounting Kit	£5

A3000 IDE Hard Drives

All hard drives are supplied fitted to an 8-bit interface for internal fixing

ADA2360	170Mb	12ms	£179
ADA2090	340Mb	11ms	£249
ADA2200	510Mb	11ms	£299

Syquest Hard Drives

SQ3270A	270Mb IDE	Int	£259
SQ3270S	270Mb SCSI	Int	£269
SQ3270Ex	270Mb SCSI	Ext	£369
SQ5200Ex	200Mb SCSI	Ext	£358
SQ327	270Mb Cartridge		£48
SQ2000	200Mb Cartridge		£59

SCSI Hard Disk Drives

Conner			
CFP1080S	1.0Gb	10ms	£289
CFP2105S	2.15Gb	9ms	£525
CFP4207S	4.22Gb	9ms	£838
Fujitsu			
M2684S	532Mb	12ms	£125
M1606SA	1.1Gb	10ms	£265
M2903SA	2.0Gb	12ms	£565
M2909S	3.0Gb	11ms	£849
IBM			
84G9001	1.0Gb	10ms	£299
74G7044	2.0Gb	8ms	£699
74G7045	4.0Gb	8ms	£1099
74G7073	5.25Gb	8ms	£1249
Quantum			
Maverick	540Mb	12ms	£143
Fireball	1.08Gb	9ms	£249
Atlas	2.1Gb	9ms	£585
Seagate			
ST5660N	528Mb	12ms	£216
ST31230N	1.05Gb	9ms	£329
ST3243ON	2.1Gb	9ms	£609
ST15150N	4.2Gb	11ms	£1220

Interfaces & Accessories

16-bit SCSI Interface – A300/A400	£89
32-bit SCSI-2 Interface – RiscPC	£159
Dual SCSI Interface cable	£9
25'D' TO 50w SCSI Interface cable	£15
50w to 50w SCSI Interface cable	£15
SCSI-2 Interface cable	£20

Canon IX4015 Scanner



The IX-4015 is a compact A4 flatbed scanner offering full 24-bit colour scanning up to a max resolution of 400 x 800 dpi.

- 400 x 800 dpi resolution in 24-bit colour
- 400 x 1200dpi resolution in 256 grey scales
- Connection via SCSI interface (not included)
- ImageMaster & Twain driver

Special Offer Price £549

- Upgrade to PhotoDesk software £110

CD-ROM Drives

Oscar CD-ROM Drive

A low cost dual speed CD-ROM drive that attaches to parallel printer port. Suitable for use on A3010, A3020, A4000, A5000 and A4 Notebook

Oscar CD-ROM Drive - parallel £199

Bravo CD-ROM Drive

A low cost dual speed CD-ROM drive that has a built-in audio mixer. Connection to the computer can be by parallel printer port or via SLCD interface.

Bravo CD-ROM Drive - parallel £249
Bravo CD-ROM Drive - A5000 £249
Bravo CD-ROM Drive - A3000 £249

Victor CD-ROM Drive

A quad speed CD_ROM drive that connects to the computer via SCSI interface (not included)

Victor CXX442 CD-ROM Drive £299

Indigo CD-ROM Drive

A range of internal CD-ROM drives for the RiscPC. Two versions are available – dual speed and quad speed.

Indigo CAA300iA – Dual Speed £175
Indigo CAA340iA - 4x Speed £199
Indigo CXX441 - 4x Speed SCSI £199

Proteus Optical CD-ROM Drive

A quad speed CD_ROM drive that also has the ability to read and write 650Mb optical disks. Connections is via SCSI interface.

Proteus CS-ROM Drive - Internal £549
Proteus CD-ROM Drive - External £649

Speakers

Aries Stereo Speakers		£6
Aries Hi Fi Speakers	10W	£19
Aries Hi-Fi Pro Speakers	25W	£28
Aries Digital Speakers	25W	£39
Aries Digital+ Speakers	70W	£48
Aries UltraPower Speakers	160W	£99
Aries Internal Speakers		£15
Aries Stereo Headphones		£4.50
Aries Microphone		£4.50

Aries Fax Modems

Enter the world of high speed communications with the new Aries XLink range of fax modems. Two models are available, offering speeds of V32bis 14400bps or V34 28800bps. Error correction and data compression is standard on all models.

When used with the ArcFax software, you can send faxes directly from your computer, as easily as printing a document.

- 14400bps V32bis or 28800bps V34 data rates.
- V32, V32bis, V22, V22bis and V21
- Error correction to MNPS and V21
- Data compression to MNPS and V42
- Call back security
- Synchronous & Asynchronous operation
- Group 3, Class I & II fax at up to 14400 (V17)
- Group 1 and 2 fax compatible (V27ter and V29)
- 100% Hayes compatible
- 3-year manufacturers warranty
- BABT approved

XLink XL144e Fax Modem	£87
XLink XL144e Fax Modem & ArcFax	£107
XLink XL288e Fax Modem	£159
XLink XL288e Fax Modem & ArcFax	£179

Multiscan Monitors

Acorn Monitors		
AKF52	14"	£239
AKF50	14"	£299
AKF60	14"	£299
AKF85	17"	£499
Aries Monitors		
Alphascan Pro LR	14"	£185
EnergyPro 6000i LR	15"	£239
NEC		
XV15	15"	£279
XV17	17"	£559
Panasonic		
TXD1562	15"	£260
TXD1733	17"	£449
TXD2051	20"	£1019
Sony		
CDP15SF1	15"	£302
GDM17SE1	17"	£808
GDM20SE1	20"	£1395
Taxan		
EV 410LR	14"	£189
EV 580LR	15"	£255
EV 895LR	17"	£795
EV 1080LR	20"	£879

Watford Electronics Ltd
Mail Order & Showroom: Jessa House, 1 Finway, Dallow Road, Luton LU1 1TR

SALES HOTLINE 01582 745555

Prices exclude carriage & VAT @ 17.5%

PRINTERS & ACCESSORIES

LASER PRINTERS

Brother HL630	6ppm	£317
Brother HL660	6ppm	£455
Brother HL1260*	12ppm	£899
Brother HL631	6ppm	£349
Canon LBP430W	4ppm	£359
Canon LBP1260	12ppm	£893
Epson EPL3000*	4ppm	£369
Epson EPL5200+	5ppm	£460
Epson EPL9000	8ppm	£1179
Epson EPL9000 PS	8ppm	£1362
HP LaserJet 4MV	16ppm	£1989
HP LaserJet 4V	16ppm	£1368
HP LaserJet 4+	12ppm	£977
HP LaserJet 4M+	12ppm	£1299
HP LaserJet 4Si	16ppm	£2085
HP LaserJet 4Si MX	16ppm	£2967
HP LaserJet 5P	6ppm	£578
HP LaserJet 5MP	6ppm	£722
HP LaserJet Colour	8ppm	£4199
HP LaserJet 5L	5ppm	£355
NEC Superscript 610+*	6ppm	£289
NEC Superscript 660i*	6ppm	£555
NEC Superscript Colour 3000*		£649
Oki OL400ex*	4ppm	£279
Oki OL410ex*	4ppm	£382
Oki OL810ex*	8ppm	£649
Oki OL850 PS*	8ppm	£1199
Oki OL1200ex*	12ppm	£966
Panasonic KXP4430**	5ppm	£449
Panasonic KXP4440**	10ppm	£679
Panasonic KX-P6100	5ppm	£265
Panasonic KX6150	6ppm	£305
Star Win Type 4000	4ppm	£288

On-site warranty: *=1 Year ** = 2 Years

LASER RAM UPGRADES

Type	1M	2M	4M	8M
Brother HL630	£85	-	-	-
Brother HL631	£70	-	-	-
Canon LBP4+	£139	-	-	-
Canon LBP4i	£109	-	£279	-
Canon LBP8 IV	£119	-	£299	-
EPL4000/4100/4300	£69	£120	£225	-
EPL5200/5600	£49	£115	£199	-
HPIII/IIIP/IIID	£65	£112	£169	-
HP II/IID	£70	£115	£175	-
HP IIISi	-	£85	£158	£229
HP 4/4M/4P/5P	-	-	£109	£215
HP 4L/4ML	£65	-	-	-
KX-P4410/4430	£99	£199	-	-
KX-P4420/4450i	£65	£110	£165	-
KX-P4400/5400	£75	£109	£175	-
OKI OL400e	£99	£118	-	-
Star LP8	£138	£225	-	-
Star LS5	£75	-	-	-

LASER CONSUMABLES

Type	Toner	Drum	Dev
Brother HL600 Series	£22	£99	-
Canon/Star 4s	£51	-	-
Canon LBP-8 IV	£70	-	-
Canon LBP-8III	£46	-	-
EPL4100/4300	£64	£89	-
EPL5200	£82	-	-
EPL7100/7500/8100	£117	-	-
Fujitsu VM600	£85	-	-
Fujitsu VM800	£115	-	-
Fujitsu VM4	£29	£149	£89
HPII/III/IIID	£47	-	-
HP IIP/IIIP	£51	-	-
HP IIISi/4Si/MX	£77	-	-
HP 4/4+/4M	£65	-	-
HP 4L/4ML/4P/4MP	£45	-	-
HP 4V/MV	£109	-	-
HP 5P/5MP	£60	-	-
NEC 610	£75	-	-
NEC S60/60P/62P/90/95	£105	-	-
OKI OL400/800	£19	£189	-
OKI OL400e	£17	£129	-
KX-P4410/30	£28	£80	£90
KX-P4440	£32	£108	£115
KX-P4420	£24	£57	£55
KX-P4450/50i/51/55	£18	£75	£60
KX-P4400/5400	£14	£55	-
KX-P6100	£12	£98	-
Qume Crystalprint	£99	£189	-
Star LS-5	£83	-	-
Star Wintype	£68	-	-

LASER ACCESSORIES

JetPage Postscript Cartridge - IIP/IIIP	£169
Postscript Upgrade for LaserJet 4	£270
Postscript Upgrade for LaserJet 4P	£225
LaserJet 4 Lower Paper Cassette	£205
LaserJet 4 JetDirect Ethernet Card	£339
LaserJet IIIP Lowe Paper Cassette	£115
Ozone filter for KX-P4420	£9
Ozone filter for KX-P4450/4455	£20
LaserJet 4Si Duplex Unit	£475
Envelope Feeder for Laserjet 4	£199
LaserJet III FX/IBM Emulation Cart	£79
Lower Paper Tray for Canon LBP-4	£98
A5 Paper Feeder for Laserjet 4P	£85

9 PIN MATRIX PRINTERS

Citizen 1200+ Parallel	80col	£90
Citizen 120D+ Serial	80col	£105
Epson LX100	80col	£98
Epson LX300	80col	£95
Epson LX1050	132col	£178
Epson FX870	80col	£242
Epson FX1170	132col	£297
Epson DFX5000+	132col	£1149
Panasonic KX-P1150	80col	£87
Panasonic KX-P3696	80col	£259
Star LC15	132col	£195
Star LC100 Colour	80col	£97
Star LC90	80col	£78
Star ZA200 Colour	80col	£274
Star ZA250 Colour	132col	£341

24 PIN MATRIX PRINTERS

Citizen ABC Mono	80col	£103
Citizen ABC Colour	80col	£125
Citizen Swift 200 Mono	80col	£138
Citizen Swift 200 Colour	80col	£146
Citizen Swift 330X	132col	£309
Epson LQ100	80col	£99
Epson LQ150 Mono	80col	£112
Epson LQ150 Colour	80col	£158
Epson LQ300	80col	£147
Epson LQ570+	80col	£209
Epson LQ870	80col	£370
Epson LQ1070+	132col	£291
Epson LQ1170	132col	£428
Epson DLQ3000	132col	£805
NEC P2Q	80col	£98
NEC P3Q	132col	£178
NEC P62	80col	£315
NEC P72	132col	£372
Panasonic KX-P2023	80col	£108
Panasonic KX-P2124	80col	£198
Panasonic KX-P2135 Colour	80col	£124
Panasonic KX-P3626	132col	£252
Star LC24-15 II	132col	£232
Star LC240 Mono	80col	£90
Star LC240 Colour	80col	£109
Star XB24-200 Colour	80col	£340
Star XB24-250 Colour	132col	£408

RIBBONS/INK CARTRIDGES

Manufacturers Original Ribbons Only

Type	Black	Colour
Canon BJ10ex/BJ10sx	£14	-
Canon BJ30	£10	-
Canon BJ200/BJ230	£16	-
Canon BJ300/BJ330	£11	-
Canon BJC70	£9	£14
Canon BJC600	£9	£6.50
Canon BJC800	£6	£22
Canon BJC4000 Ink Tank	£7	£13
Citizen 120D+	£4	-
Citizen Swift 200/240/ABC	£4	£13
Citizen Swift 24X	£8	£18
Epson LX100	£4	-
Epson LX400/LX850/FX870	£4	-
Epson LX1050/FX1170	£5	-
Epson LQ100	£4	-
Epson LQ150	£4	£12
Epson LQ570/870	£5	-
Epson LQ1070/1170	£8	-
Epson LQ2550	£8	£16
Epson SQ870/SQ1170	£23	-
Epson Stylus Colour	£12	£27
Epson Stylus 800/1000	£10	-
Epson Stylus 820	£15	-
Epson Stylus Colour II/IIs	£15	£19
Fujitsu B100/B200	£18	-
HP DeskJet 500 Series	£19	£21
HP DeskJet 600/660	£20	£23
HP DeskJet 850	£22	£20
HP DeskJet 310/320	£13	£21
HP DeskJet 1200c	£19	£23
HP DeskJet 1600	£22	£23
HP PaintJet	£16	£18
HP PaintJet XL300	£16	£18
Kaga/Taxan KP810/815	£5	-
NEC P3Q/P32Q	£8	-
NEC P62/72/90	£8	£14
Panasonic 1150/1170/1180	£7	-
Panasonic 2180/23/24/35	£7	£14
Panasonic 1624/2624	£8	-
Panasonic KXP3626/3696	£11	-
Star LC10/LC20/LC100	£5	£9
Star LC100/200	£5	£11
Star LC24-20/24-100/24-200	£5	£12
Star LC24-30	£8	£12
Star XB24/ZA200/ZA250	£5	£12
Star SJ48	£15	-
Star SJ144 Thermal	£6	£8

INKJET PRINTERS

Canon BJ200ex	80col	£170
Canon BJ30	80col	£149
Canon BJ230	132col	£236
Canon BJ300	80col	£351
Canon BJ330	132col	£388
Canon BJC70	80col	£219
Canon BJC600e	80col	£330
Canon BJC800	32col	£1049
Canon BJC4000	80col	£227
Citizen ProJet IIC	80col	£205
Epson Stylus 820	80col	£215
Epson Stylus 1000	132col	£325
Epson Stylus Colour Pro XL	132col	£1539
Epson Stylus Colour IIs	80col	£260
Epson Stylus Colour II	80col	£307
Epson SQ870	80col	£445
Epson SQ1170	132col	£598
HP DeskJet 320	80col	£164
HP DeskJet 320 & CSF	80col	£180
HP DeskJet 600 Mono	80col	£207
HP DeskJet 1200C	80col	£630
HP DeskJet 1200C PS	80col	£992
HP DeskJet 1600C	80col	£822
Oki OJ300 Colour	80col	£232
Star SJ144	80col	£178
Star Wintype 800C Thermal	80col	£592

SHEET FEEDERS

Canon BJ10ex/BJ10sx	£40
Canon BJ300	£86
Canon BJ330	£96
Citizen Swift 24/200/240	£75
Epson LX400	£69
Epson LQ570/LQ870	£47
Epson LQ1070/LQ1170	£89
HP DeskJet 310/320	£48
NEC P20/P220	£59
NEC P3Q/P32Q	£85
Panasonic 1170/1180/1123	£59
Panasonic 1124i/1124/2124	£79
Panasonic 1824/2824	£128
Panasonic KX-P2135	£30
Star LC100	£69
Star LC24-20	£69
Star LC200/LC24-200	£69

INKJET REFILL PACKS FOR

• Canon BJ10ex/BJ10sx - 2 pack	£10
• Canon BJ10ex/BJ10sx - 5 pack	£24
• Canon BJ10ex/BJ10sx 1 Original Cart & 3 Refills	£36
• Canon BJ200 2 Refills	£34
• Epson SQ870/1170 - 2 Refill	£9
• HP DeskJet Std Capacity - 2 pack	£8
• HP DeskJet Std Capacity - 5 pack	£20
• HP DeskJet Std Capacity black Cart +3 Std capacity refills	£30
• HP DeskJet Hi-Capacity - 2 pack	£17
• HP DeskJet Hi-Capacity - 5 pack	£35
• HP DeskJet Colour Cart & 1 each (3) colour refills	£39

ACCESSORIES

Citizen Swift 200/240/ABC Colour Kit	£32
Canon BJ10sx Battery Pack	£32
Epson 0K Serial Interface	£29
Epson 8K Serial Interface	£75
Epson 32K Serial Interface	£95
Epson LQ100 Tractor Unit	£29
Epson LX300 Colour Kit	£29
Epson Stylus 820 Colour Kit	£75
HP DeskJet FX Emulation Cartridge	£49
HP DeskJet IBM Emulation Cartridge	£57
HP DeskJet 500 256K RAM Cartridge	£75
HP DeskJet 320 Battery Pack	£33
HP DeskJet 320 CarryCase	£49
HP DeskJet 320/540 Colour Kit	£28
HP DeskJet 320 Parallel Cable	£12
HP DeskJet Prestige Elite Fonts	£55
HP DeskJet Letter Gothic Fonts	£56
HP DeskJet 600 Colour Kit	£29
Panasonic Serial Interface	£49
Panasonic 32K Buffer	£16
Panasonic 2180/2123 Colour Kit	£30
Star 8K Serial Interface - LC Range	£52
Star 8K Serial Interface - XB Range	£39
Star 32K Buffer - LC24/XB24	£52
Dustcovers for 80col printers	£6
Dustcovers for 132col printers	£9

SPECIAL OFFERS

• 80 col Perspec Printer Stand	£7
• 132 col Perspex Printer Stand	£10
• 80 col Printer Stand	£8
• 132 col Printer Stand	£12

LUTON STORE
Finway, Dallow Road, Luton, Beds.
Tel: 01582 74 55 55

WATFORD STORE
250 Lower High Street, Watford, Herts.
Tel: 01923 237774

HP On-Site Warranty Packs

Model	1 Yr	3 Yr
Mono DeskJet/Deskwriter	£32	£40
Colour DeskJet/Deskwriter	£45	£65
LaserJet 4L/4ML DJ1200/1600	£78	£90
LaserJet4+/4M+	£135	£160
LaserJet 4V/4MV	-	£200
LaserJet 5P/5MP	-	£130

PRINTER SHARER/BUFFER

Manual Printer Sharers

Type	Serial	Parallel
2in/1out	£12	£13
2in/2out	£28	£29
3in/1out	£15	£17
4in/1out	£24	£26
5in/1out	-	£38

Auto Parallel Printer Sharer Buffers

Type	0K	256K	1Mb
2in/1out	£29	-	-
2in/2out	-	£105	£134
4in/1out	£45	-	-
4in/2out	£69	£124	£149
8in/1out	£64	-	-

Auto Serial Printer Sharer Buffers

Type	0K	256K	1Mb
2in/1out	£27	-	-
2in/2out	-	£124	-
4in/1out	£44	-	-
4in/2out	£69	£147	-
8in/1out	£62	-	-

RAM Expansion for above Auto Sharers

	256K	1Mb	2Mb
RAM Module	£59	£78	£124

Pocket Buffers

	256K	1Mb	2Mb
Parallel Flash Buffer	£65	£98	£119
Paralel Fast Flash Buffer	£85	£125	£158
RS232 Plotter Buffer	£155	£184	£330

COMPACT CONVERTER

Serial to Parallel & Parallel to Serial	£49
As above with 256K buffer	£55
IEEE-488/Centronics Converter	£49
RS232 to RS422 Converter	£37
Parallel Line Extender	£37

PRINTER LEADS

	1.8m	5m	10m
PC Parallel - 18 wire	£4	£8	£13
PC Parallel - 25 wire	£5	£10	£15
25 'D' Male/Male	£4	£8	£13
25 'D' Male/Female	£5	£9	£14
36 Centronics Male/Male	£8	£10	£15
BBC B/Master Parallel	£6	-	-

PAPER & TRANSPARENCIES

A4 80g White Laser Paper - 500sht	£2.50
A4 80g Coloured Paper - 500sht	£3.50
9.5" x 11" Fanfold paper - 1000sht	£7
9.5" x 11" Fanfold paper - 2000sht	£12
14.5" x 11" Fanfold paper - 1000sht	£8
14.5" x 11" Fanfold paper - 2000sht	£14
A4 70g Fanfold paper - 1000sht	£9
A4 70g Fanfold paper - 2000sht	£15
DeskJet Transparencies - 50sht	£35
DeskJet Cut Sheet A4 Paper - 200sht	£15
Stylus coated paper 360 A4 200 sht	£17
Stylus coated paper 720 A4 200 sht	£19

High Quality Paper

500 sheets A4 90gsm pure white ideal for laser & inkjet printers

£5.50

LABELS

On continuous fanfold sheets

1000 90mm x 36mm Single Row	£4.50
1000 90mm x 36mm Twin Row	£4.80
1000 90mm x 49mm Twin Row	£4.95
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*info

Dave Lawrence and Dave Acton present more programs, tips and techie trivia from beyond the PRM.

Spritely activity

Author: Darren Salt

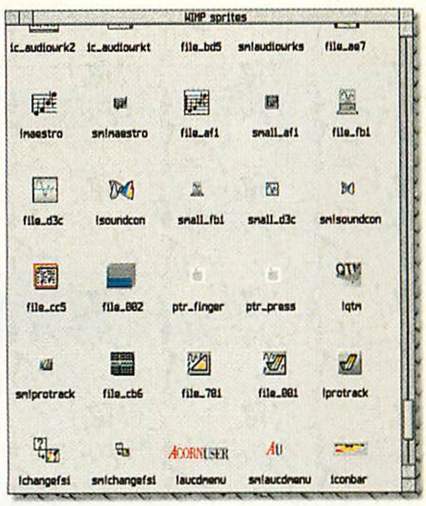
Darren Salt is a well known contributor to *INFO. His latest offering, *SpriteFS*, is a pseudo-*Paint* program which allows you to view the sprites in the system and WIMP sprite areas as if they were in *Paint* windows. The system sprites can be viewed by clicking Select on the *SpriteFS* icon; the WIMP sprites can be viewed by clicking Adjust. You can load sprite files by dragging them to either the system sprites window or the WIMP sprites window. The sprites are merged with the appropriate sprite area; extra memory is claimed if required. Individual sprites or the whole of each sprite area can be saved. The windows can, of course, be resized, and do their best to act like *Paint* sprite file windows.

The main menu contains many options similar to a standard paint viewer; from here you can save sprites, delete them, rename them and copy them. You can also find out information on the whole sprite area or any given sprite. In addition, you can update (i.e. redraw) the sprite area window, clear all the sprites, and remove left-hand wastage from sprites.

'Left-hand wastage' is caused when a sprite has had its left hand adjusted (either by deleting or inserting columns, or by horizontal flipping). In these cases it is quite possible that there are 'bits' wasted down the left-hand edge. This will make the sprite larger. Removing left-hand wastage recovers this memory. It is a shame that *Paint* doesn't have this option as well!

SpriteFS will try to repair damage to the sprite area should it find any. However, it cannot deal with bad sprites – it only checks the size of the area, the pointers to the first sprite and free space, the number of sprites, and the size of each sprite (used to find the next). You will be told of any damage that can be dealt with.

If a sprite name is corrupted, that sprite cannot be deleted, saved or renamed, and will show up as 'Bad sprite' in the sprite window. In this situation you should save all the sprites that can be saved – if they aren't already – preferably to *Paint*, making a single sprite file, then you should clear the sprite area and reload the sprites, along with any others which are needed.



System sprite note

It is quite interesting to open *SpriteFS*'s system sprite display while using *Memphis* (the replacement RAM filing system) or older versions of *Spark FS*. Both of these use the system sprite area as workspace. This was because in the days before Dynamic Areas, it was very hard to claim memory through RISC OS that could be easily returned without fragmentation. If you ask for some memory from the RMA and then give it back a little later, it is quite likely that something else has claimed some in the mean time, and the piece you give back is separated from the rest of the free space and cannot easily be reused. This is a common problem with memory allocation systems. However, the system sprite area was (and is) automatically compacted when a sprite is deleted leading to a completely contiguous block of claimed memory with no nasty holes.

Risc PC compatibility

SpriteFS will attempt to display 'deep' sprites with up to 256 colours on all RISC OS computers. To indicate that they are 'deep' sprites, their names are displayed in blue. Unless running on a Risc PC, no attempt is made to display new format sprites with masks (unless the sprite itself is 1bpp). As yet, it has only been tried with 15- and 32-bit colour sprites; it will display these correctly on a Risc PC, but will not even attempt to display them on older machines.

All of a dither

Author: Andrew Ord

Next up is an incredibly useful image processing module from Andrew Ord. It provides a simple SWI interface to a Floyd-Steinberg dithering routine – the F and the S in *ChangeFSI*. One of the few things that Acorn's versatile image processor can't do yet is to take a 24-bit image and reduce it to a given set of 256 (or 16) colours; it is restricted to using the traditional Acorn 256-colour palette that we know and love. Andrew's module does not go into nearly as much detail as *ChangeFSI* when it comes to scaling and histograms and so on, but it can dither to a given palette.

At the moment there is no desktop front-end to the module, but Andrew (and we) hopes that an enterprising *INFO reader will be up to the challenge. For the time being, there are only BASIC shell programs that interface to the module. The files comprising the *FSI* programs can be seen by double-clicking on the *OrdFSI* application.

Andrew uses a user file type (&00F) to contain the information for a destination palette. In addition to the 256 palette definitions, these files contain dithering information to speed up the FS routine. To create one of these files, take a look at either *Pal-256, Pal-Grey* or *Pal-332*. These create a standard Acorn 256 colour palette, a grey scale and the possible colours created with 3 bits of red, 3 bits of green and 2 bits of blue. This last one provides a fuller cover of RGB space than the standard Acorn palette, but lacks a 16-grey scale. The actual palettes can be found in the *Palettes* directory.

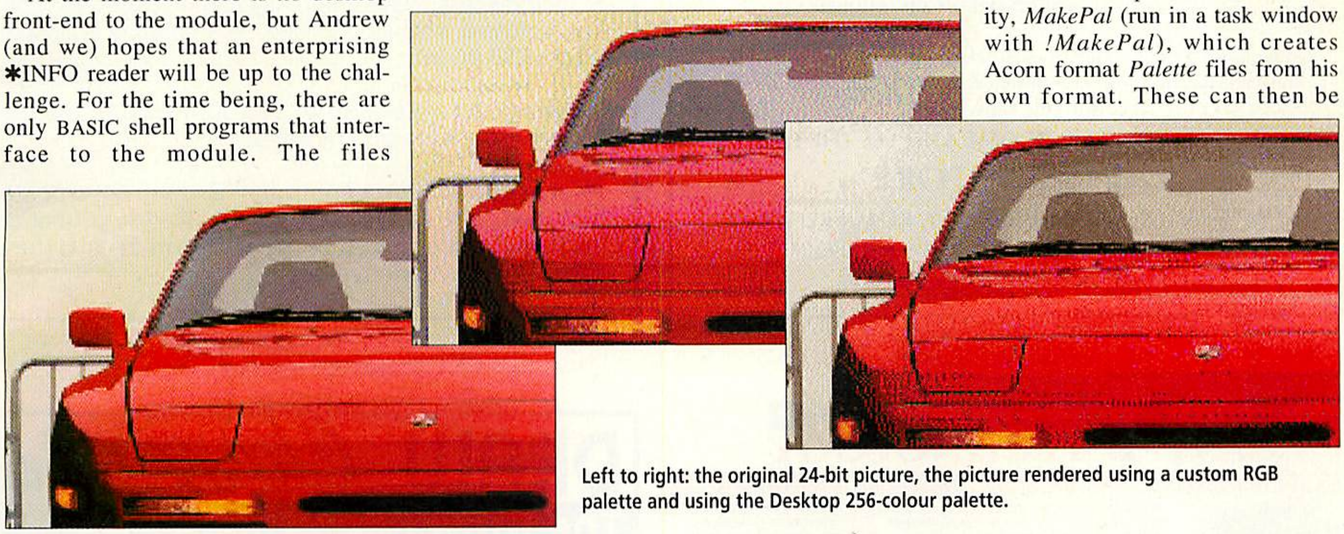
The SWI call to process the palette is:

```
SYS"IPC_CreateTables",
palette_pointer, lookup_table_area,
number_of_colours
```

The palette_pointer is a pointer to 4*number_of_colours bytes of memory, normally 4*256. By making number_of_colours = n, it is possible to limit the colour matching to the first n colours in the palette, thus enabling the programmer to make lookup tables for 16 grey levels, for example.

To process an image, it needs to be in a completely raw form – RGB triples (i.e. RR GG BB) from top left to bottom right. No header is expected – the width and height have to be set in the program, sorry. An example file of a suitable size is provided. The *FSI* program is most conveniently run from within a taskwindow – double-click on the Obey file *!FSI*. You are prompted for the source file and the palette file, and you can simply shift-drag the file into the task window to enter the file name. Enter a suitable output filename and the image will be converted in a matter of seconds. The output can then be viewed in *Paint*.

Andrew has provided a third utility, *MakePal* (run in a task window with *!MakePal*), which creates Acorn format *Palette* files from his own format. These can then be *PRINTed to set the screen palette.



Left to right: the original 24-bit picture, the picture rendered using a custom RGB palette and using the Desktop 256-colour palette.

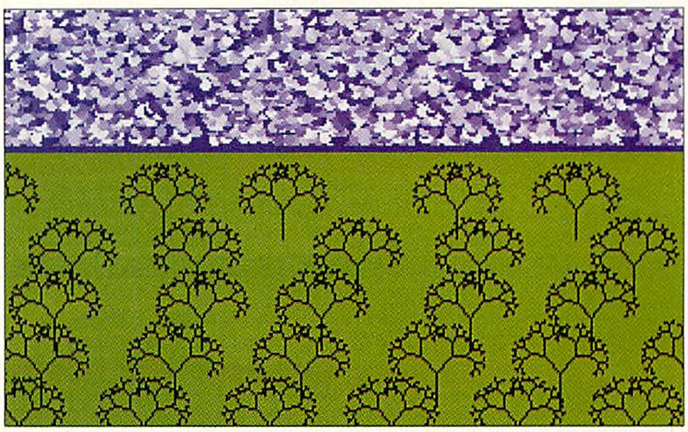
As you can see, there are only the bare bones here. Fame and fortune are on offer to the best desktop front-end to Andrew's code that allows palettes to be defined easily or imported, and that can understand some of the well-known picture formats such as RISC OS deep sprites, Clear files and so on.

Can't see the wood...

Author: Jan Vibe

Aha! Just when you thought it might be safe to look at your monitor again, here's another hideous eye-bender from our old friend Jan Vibe. *Wood* is an incredibly deceptive little ditty and we almost discarded it without thinking – try running it now and you'll see what we mean. Now the clever bit – this BBC Welcome Tape reject is actually a stereogram!

So have another look at it and do whatever you do to get 'magic eyes' (groan) and be amazed. Don't look for any hidden rabbits or baby otters – there aren't any. But the trees will suddenly recede quite convincingly under a blanket of sky. The sky is also noteworthy for not being drawn in vertical slices like some of our previous stereograms. The illusion of depth is much improved sitting a metre or so back from the screen; even at that distance the 3D image is remarkably easy to 'pick up'.



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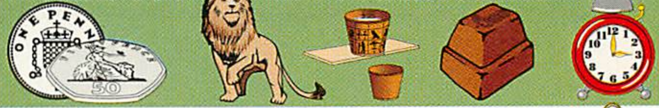
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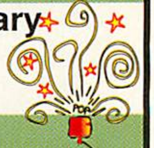
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Calculated RISC

Authors: Andrew Markwick, Sam Radford and Simon Weaver

The first of a trio of number-crunchers now. *Numbers* from Andrew Markwick of Cleveland simply calculates powers and factorials in the Desktop. However, it copes with results of a size that would melt your average calculator's LCD display.

Double-click to load, and enter the expected size of the result. By default this is 1000 digits, but you can increase this as required (and as memory permits).

Select Factorial or Powers from the icon bar menu and the appropriate window will be opened (alternatively, just click on the *Numbers* icon with Select or Adjust). Enter the value or values and press Return. If the 'Intelligent Save' button is ticked, the result will be saved as a text file inside *!Numbers.Numbers* with a suitable name (for instance *fact1000*), and will also be sent to *Edit* or the like for immediate viewing. If unticked, a save box will appear instead. You can also save the last calculated result using 'Save Current' on the menu.

How it works

An array is dimensioned with one element for each digit in the expected result. The result is set to one and then each element of the array is multiplied by the appropriate value. In the case of working out powers, this is, of course, constant. Now, the program looks for any 'carries.' The elements of the array are again examined in sequence. If any is greater than nine, the extra is added to the next digit up and so on. Simple stuff, but effective!

The Great Divide

And the giant calculation theme continues with some machine-code offerings from Sam Radford of Cambridgeshire. *Ass_Add, Ass_Div* and *Ass_Mul* are demonstrations of addition, division and multiplication using accuracy of up to 400 digits. Just run the programs and enter some numbers to try them out.

Sam has also provided a library containing all three routines – *CalcLib*. To use, install with LIBRARY and assemble the code with PROCassemble_calculator. Now enter the operands into the byte arrays operand1 and operand2. The operands are stored as one byte per digit, terminated with 10 and beginning with a leading zero. So for example, to use 21 as the first operand use:

```
operand1?0=0  : REM leading 0
operand1?1=2
operand1?2=1
operand1?3=10  : REM terminating byte
```

Having set up the operands, call the machine code routines begin_addition, begin_division or begin_multiplication as required. The byte array result contains the answer.

Sam also provides a more complex example of big calculations. Ass_ecal calculates that ever popular constant to ridiculous accuracy using the formula:

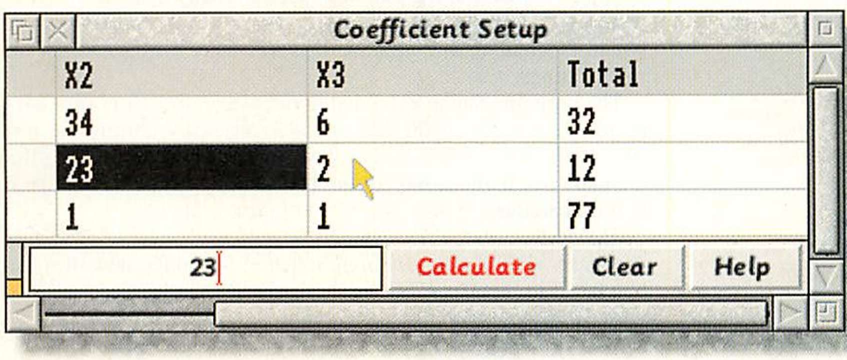
```
e= 1/0! + 1/1! + 1/2! + 1/3! + …
```

Clearly, a big factorial calculator is needed, and this is included as a separate example on the disc. The number of terms and accuracy can be altered by changing it% and acc2% accordingly. Sam worked out e to 1990 decimal places in a little under 24 hours.

Of course, it would be nice if all these infinite accuracy functions were in a module – any offers?

EQUS

There's definitely a mathematical flavour to this month's column. Simon Weaver's *Equs* is not a tribute to the Assembler directive of the same name but a cunning simultaneous equation solver than works in the Desktop.



Equs installs on the icon bar and features its own help window, as well as support for interactive help. Before you start you will need some simultaneous equations, like these which we prepared earlier:

```
23x + 34y + 6z =32
64x + 23y + 2z =12
0x + y + z =77
```

You can select up to 99 unknowns but you will need the same number of fully independent equations as the number of unknowns you have.

To begin, click on the *Equs* icon and the setup window will appear. Enter the number of unknowns here – 3 in the case of the example above. Now you can give names to the unknowns; by default they will be X, Y and Z but you can give them any textual names you like and clicking on Sequence will name them X1, X2, X3...

When ready, click on OK to bring up the coefficient setup window. This is where the equations are actually entered. Simply type in the coefficients from your equations in sequence (in the example, 23, 34, 6, 32 etc) and click on Calculate to provide the result. In the example, this is:

```
x = 3.86096 y = -18.5286 z = 95.5286
```

The results window has its own menu to select the number of significant figures. There is also an option to force the values to be displayed in exponent form.

You can include standard Basic functions like SIN or LOG when entering coefficients. The string entered is effectively processed with EVAL. Simon has also defined a few useful constants, including AVOGADRO (or MOLE) for Avogadro's constant, GRAV for acceleration due to gravity, and ROOT2, the square root of 2. They are declared simply in the program, so others could be added as required.

Simon says: 'Because of the way the program calculates the unknown values, when using very small or large coefficients there may be inaccuracies in the results. So, after calculating the results the program puts the answers back into the original equations and calculates the percentage difference with the actual answer. This will show you how accurate the results are. With more significant figures the accuracy will be higher.

'With most real situation numbers that have been tried, I have had no problems at all, but if you do it may help to swap around some of the lines. Particularly try to avoid very small/large numbers on the diagonals. The program won't work at all if the number in the first cell is zero, but you are warned if it is.

'It may also simply not be possible to calculate the results because the equations are not independent. For example:

```
x+y+z = 4
2x+2y+2z = 8
x+2y+3z = 12
```

With these the second equation is just twice the first, so there are only really two independent equations.'

Electronic tag

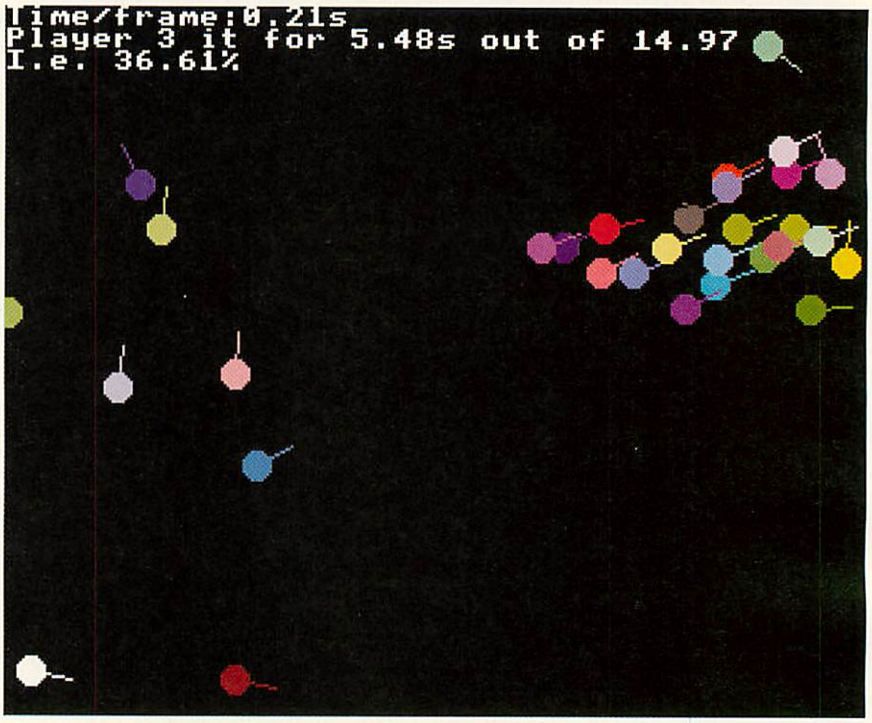
Author: Robert Munro

In June we carried what we believed to be the first computer version of a playground game; Jamie Shotton's *Chase* recreated the thrills and spills of playground favourite tig. Robert Munro has enhanced the original with, among other features, computer players.

As with the original, a small mouse-driven menu is provided at the outset. See June's issue for full details, but here is a quick recap:

During the game you have to 'tag' any other player by prodding them with your prong. After you have tagged someone there is a brief period of armistice to allow you to make off before you can be tagged back.

The menu allows all the game variables – size of prong, timeout periods etc. – to be altered, and includes an option for backward movement. You are no longer limited to four players, though obviously you will need a pretty fast machine to emulate a full playground. Having set everything up, click on Start Game and then specify which players are 'automatic' and which are human. For each human one you will need to define the keys for left, right and accelerate.



Verbal remedy

Author: Graham Campbell

If you're thinking of making use of the wonderful *Le Shuttle* and need to brush up on your conversational French, then Graham Campbell may have just *Le Program* for you. The imaginatively entitled *FrVb_Test* will grill you on your verbs until you've had enough.

Accented characters are generated by using some of the punctuation marks. These have had their appearance designed to produce the required acutes and graves. If you don't like using these, the function keys can also be used. There is a keystrip in the *Extras* directory describing what accent is where.

@	à	a grave
]	â	a circumflex
\	ç	c cedilla
{	é	e acute
}	è	e grave
[	ê	e circumflex
~	î	i circumflex
#	ô	o circumflex
$	û	u circumflex
*	ù	u grave

The program can test you in all tenses from present to conditional perfect, present subjunctive to imperfect (like all ours normally are!), and also covers all the negative forms. There is an option for producing written tests – this builds a text file in the RAM disc, so make sure you have at least 32K set aside in the task manager.

Once created, the file can be loaded into any desktop editor to print out. Graham has provided a blank *Style/Publisher* page which is suitable, although he says you may need to tweak the ruler settings.

The program can be extended in two ways; first, it is very easy to add new verbs to the list of those tested by editing the text files in the *TenseFiles* directory within the application. The files are plain ASCII and can therefore be viewed and altered with your favourite editor.

The format of the files should be self explanatory, so adding new cases should give you no headaches. Secondly, new files can be placed in the *My_Files* directory. Phrases in here are selected with the M option on the main menu.

Compatibility table

Program	RISC OS 2	RISC OS 3.1	RISC OS 3.5/3.6
French verbs	Yes	Yes	Yes
Numbers	Yes	Yes	Yes
Chase+	Yes(1)	Yes	Yes
OrdFSI	No	Yes	Yes
Assembler maths suite	Yes	Yes	Yes
SpriteFS	No	Yes	Yes
Wood	Yes(2)	Yes(2)	Yes
EQUS	No	Yes	Yes

(1) Use *Chase+RO2* for RISC OS 2.
(2) Use *LowWood* if you don't have mode 31.

*QUIT

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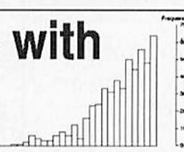
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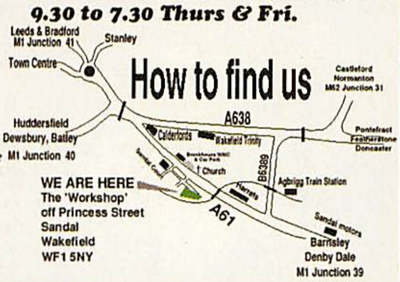
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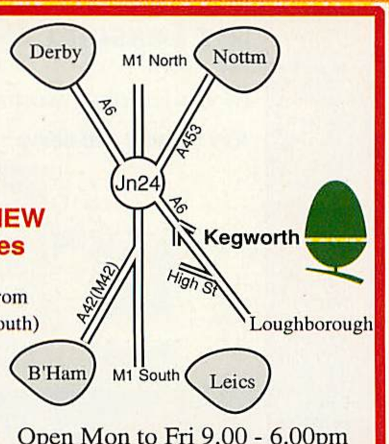
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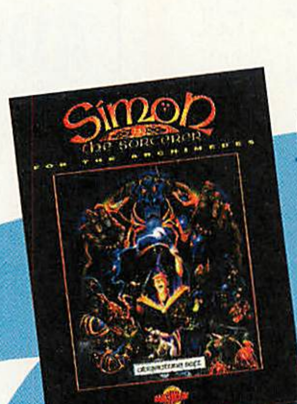
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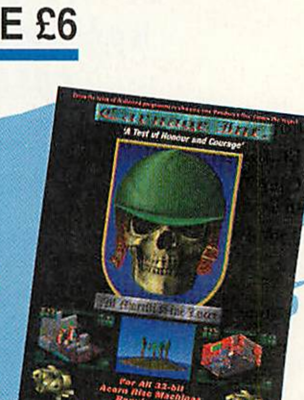
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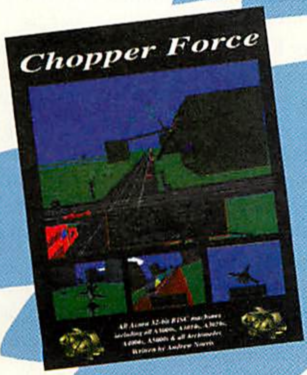
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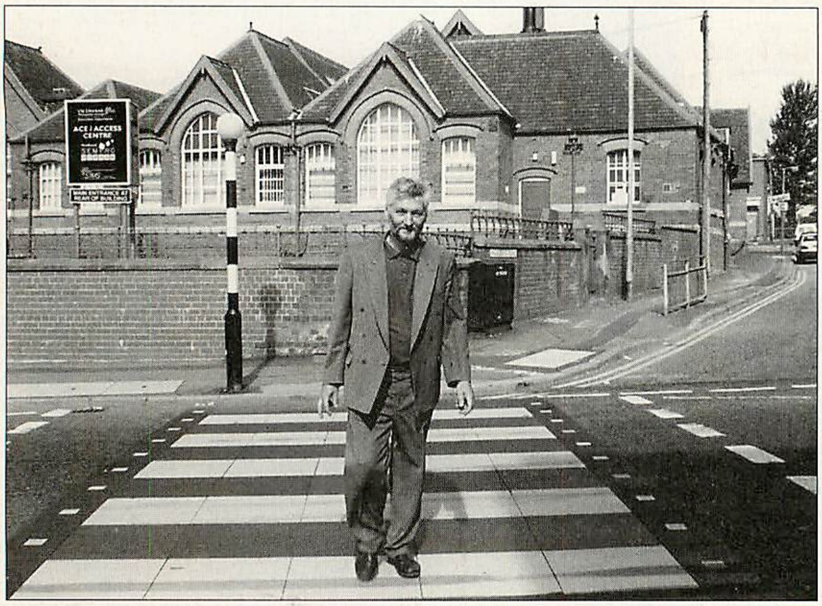
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The Moxon Interview

Martin Littler

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There's a great line in Thomas Harris' excellent novel *The Silence of the Lambs*. It's when Agent Crawford of the FBI is telling off his rookie Agent Starling for assuming something during an investigation. 'Never assume,' he says. 'If you *assume*, you make an *ass* out of *u* and *me*.'

He's right, too, you know. Without any reasoning whatsoever, I assumed that SEMERC, the special needs specialists, would have a healthy, but quite small share of the education marketplace. Well, I made an *ass* out of *u* and *me*.

'SEMERC is the largest educational software publisher in the UK,' says Martin Littler, director of SEMERC, 'even though we are specialists in special needs.

'Think of it this way. If someone brings out a product that appeals to schools but doesn't cater for the 20 per cent with special needs, then that company can only sell to 80 per cent of the market. All our products are designed with special needs in mind, but are equally suited to any children, so we can sell to 100 per cent of the market.'

Good point. He's a canny bloke, is Martin. In a way he's proof that being successful in business isn't just a case of doing business studies at your local poly and working your way up one company. Varied experience counts, and Martin's no stranger to experience.

'I started off by training to be an accountant,' remembers Martin. 'I soon realised that not only did I have no idea how double-entry book-keeping worked, but I was never going to understand it. It was a bit like being a model with a bag over your head: interestingly, my boss was thoroughly pleased when I packed it in. I'll never forget the happy look on his face... So I went back to my native Lincolnshire and worked on a farm over the summer, but I fell off a pile of straw bales, breaking both my arms. I couldn't work until the December, when I got a job cleaning buses – the best job I ever had. On my 21st birthday I qualified as a bus driver, and after driving buses round Liverpool for a while I trained as a teacher.

'My first teaching job was at Cilla Black's old school, St Anthony's, and later I rose to the dizzy heights of Deputy Head. I then became an advisory teacher, after which I joined SEMERC.'

And all this experience is working wonders. Since SEMERC ceased to be a government-owned, and therefore non-selling agency, turnover has increased at a ridiculous rate, from £70,000 per annum in 1989 to about £2.2m this year. SEMERC has recently acquired Brilliant Computing, and there are two more takeovers this year that haven't been announced yet. Not bad for a small company from Oldham, home of the tubular bandage and the, erm, world-beating football team.

So what's SEMERC planning to keep the operation expanding?

'Since joining Yorkshire International Thomson Multimedia, we've gained a mission,' says Martin. 'Our mission is to become *the* world supplier of special needs support and information, and we've got some interesting projects lined up.

'First, we were approached by British Telecom to provide an on-line special needs resource centre for its forthcoming Campus World service. We've set up a separate company, called SENSOR, to deal with this, and there are great plans for the system. For example, we'll have a 24-hour query service, where anyone can ask us any special needs question by e-mail, and we'll guarantee a reply within 24 hours.

'There's also the possibility of getting involved in teaching English as a foreign language, by selling English television programmes with English subtitles overseas: our ties with Yorkshire TV provide the programmes, and the Internet will be our way of telling overseas clients about the product. English is the biggest commodity we've got to sell, and because the Internet is in English, it's a commodity that's in demand.'

But what about the Acorn market? SEMERC is very much a multi-platform company, as are most educational suppliers these days, but how does Martin view the changes at Acorn, and the continuing battle between Research Machines, Acorn and Apple?

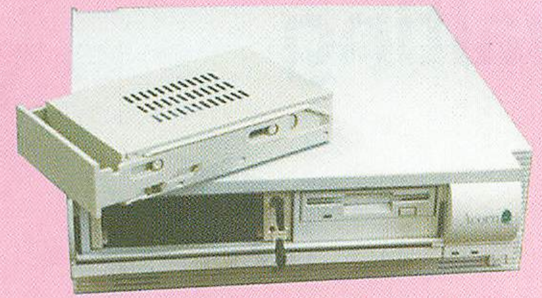
'In the ten years I've been with SEMERC, I've had people telling me that each of the three companies is dead almost every month, and none of them have been right,' says Martin. 'Right now there are people telling me that Acorn has committed suicide with its new scheme, but that's rubbish. Acorn has made the right decisions, and there will be some unhappy people in the short term, but schools will benefit strongly, and therefore so will the market.

'I think that in two years' time we'll see the three platforms converging: you won't be able to sell a machine unless it runs all three forms of software. Times are changing.'

He's not wrong, you know.

Mark Moxon AU

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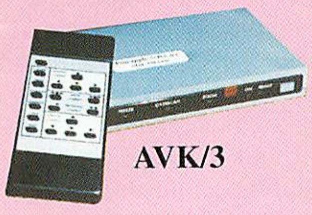
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